



*Reflect of the Committee*

# REPORT

275  
10

OF THE

## JOINT SPECIAL COMMITTEE

ON THE

## CENSUS OF BOSTON,

MAY, 1855,

INCLUDING THE

REPORT OF THE CENSORS,

WITH

ANALYTICAL AND SANITARY OBSERVATIONS.

BY JOSIAH CURTIS, M. D.



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CITY OF BOSTON.

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IN BOARD OF ALDERMEN, }  
April 16, 1855. }

Petition of George Adams, that a Census of the inhabitants of the City of Boston, be taken on the first day of May next, and that he be authorized to superintend the same.

Read, and thereupon it was

*Ordered*:—That the petition of George Adams to, take the Census of the City of Boston, be granted; and that said George Adams, with such assistant censors as he may appoint subject to the approval of the Board of Aldermen be, and they are hereby empowered to take said Census, and that a committee be appointed to superintend and direct said taking, the expense thereof to be charged to the appropriation for incidental expenses and miscellaneous claims.

Passed; and Aldermen Cooke, Clark and Sprague, appointed a Special Committee on the subject, on the part of this Board.

Sent down for concurrence.

WM. WASHBURN, *Chairman*.

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*In Common Council, May 3, 1855.*

Concurred; and Messrs. Farley, Stevens and Marble were Joined.

JOSEPH STORY, *President*.

MAY 5, 1855.

Approved.

J. V. C. SMITH, *Mayor*.

CITY OF BOSTON.

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*In Board of Aldermen, May 7, 1855.*

George Adams, who was duly authorized to take a Census of the City of Boston, during the present year, nominated to the Board, William Hamlet, George Sampson, Thomas Adams, John Jackson, Hiram B. Haskell, Charles Fletcher, Dean W. Tainter, James Cox, Darius A. Martin, Nathaniel A. Pennock, Alvin P. Knapp, Lewis Kent, Richard E. Merrill, and John F. Hamlet, as *Assistant Censors*, and requested their approval by the Board.

Read, and said nominations were approved accordingly.

Attest:

SAMUEL F. McCLEARY,

*City Clerk.*

## COMMONWEALTH OF MASSACHUSETTS.

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SUFFOLK, ss. }  
*Boston, May 8, 1855.* }

Personally appeared George Adams, William Hamlet, George Sampson, Thomas Adams, John Jackson, Hiram B. Haskell, Charles Fletcher, Dean W. Tainter, James Cox, Darius A. Martin, Nathaniel A. Pennock, Alvin P. Knapp, Lewis Kent, Richard E. Merrill, and John F. Hamlet, who have been appointed by the Board of Aldermen as Censors to take a Census of the inhabitants of the City of Boston, during the month of May, 1855, in pursuance of an order of the City Council of Boston, passed May 5, 1855, and were sworn to the faithful discharge of their duty.

Before me,

SAMUEL F. McCLEARY,

*City Clerk.*



## COMMONWEALTH OF MASSACHUSETTS.

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CITY OF BOSTON, *Sept. 25th*, 1855.

We, the undersigned Censors of the City of Boston, appointed by the Mayor and Aldermen, have taken a Census of the population of said City, and do hereby certify that the whole number of inhabitants of said City so taken, on the first day of May, of the present year, was one hundred and sixty-two thousand seven hundred and forty-eight, (including *Washington Village*.)

In testimony of which we have hereunto subscribed our names.

GEORGE ADAMS,  
GEORGE SAMPSON,  
THOMAS ADAMS,  
HIRAM B. HASKELL,  
DARIUS A. MARTIN,  
WILLIAM HAMLET,

DEAN W. TAINTER,  
CHAS. FLETCHER,  
LEWIS KENT,  
ALVIN P. KNAPP,  
N. A. PENNOCK.

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BOSTON, *Sept. 25*, 1855.

Personally appeared the above named persons and made oath that the foregoing certificate by them subscribed is true, to the best of their knowledge and belief.

Before me,

SAMUEL F. McCLEARY,

*Justice of the Peace.*



## CITY OF BOSTON.

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*In Board of Aldermen, Dec. 27, 1855.*

The Joint Special Committee of the City Council to whom was assigned the duty of taking the Census of the City of Boston, herewith submit the report and tabular statements of the Censors appointed for that purpose. In view of the importance of the subjects immediately connected with the causes at work in a growing and enterprising community like our city, as developed in the Census, and the importance to the welfare and prosperity of our citizens to understand those causes, your Committee have availed themselves of the services of our fellow citizen, Josiah Curtis, M. D., who has analyzed the subject and prepared the accompanying Article. The ability and familiarity of this gentleman with this class of investigations, and his general reputation as a writer on these subjects, renders the Article worthy of particular attention.

All of which is respectfully submitted.

BENJAMIN F. COOKE,  
G. W. MESSINGER,  
THOMAS SPRAGUE,  
C. B. FARLEY,  
BENJAMIN F. STEVENS,  
WILLIAM MARBLE.

## CITY OF BOSTON.

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*In Board of Aldermen, December 27, 1855.*

*Ordered*:—That fifteen hundred copies of the Report of the Joint Special Committee upon the subject of the Census be printed, and that the Report and accompanying Documents be recommitted to the Committee upon that subject with full power for that purpose.

Passed: Sent down for concurrence.

J. DUNHAM, JR., *Chairman.*

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*In Common Council, Dec. 27, 1855.*

Concurred:

JOSEPH STORY, *President.*

DECEMBER 29, 1855.

Approved:

J. V. C. SMITH, *Mayor.*





*To the Committee of the City Council on taking a Census  
of Boston.*

GENTLEMEN,—The undersigned, in behalf of the cen-  
sors appointed to take a Census of Boston on the first  
day of May last, begs leave to

REPORT:

That immediately upon their appointment and quali-  
fication for this service, they entered upon the discharge  
of their duties, and so vigorously followed up the work  
that the canvas of the City was completed before the  
close of May, since which time the returns have been  
carefully examined, and the result stated in the follow-  
ing report.

The following Schedule was adopted in taking the  
Census.

SECTION OF STREET.	WARD.	POPULATION.						FOREIGNERS.				CHILDREN.	VOTERS.	
		Total No.	Males.		Females.		Ireland.	Germany.	Other Countries.	Under 21.	COLORED.		5 to 15.	
			Over 21	Under 21	Over 21	Under 21							Natives.	Foreign Parentage.
	Streets, Courts, Places, &c.													

This form is the same as that used in taking the  
Census of 1850, and was deemed the best this year, as  
it would give items of information not usually embraced

in National and State Censuses, and also be valuable for the purpose of comparison. This decision may be considered fortunate, from the fact that the Massachusetts Legislature passed an act, May 21st, 1855, for a decennial census, June 1, 1855. While this State Census will probably obviate the necessity of a special census of Boston, by the City, it will not embrace the items of information secured by the City Censuses of 1850 and '55, relative to the foreign population, which is a distinguishing feature of these enumerations, and which will render them of great value in future in determining the amount and growth of this element in the population of Boston during this period of time.

In the foregoing Schedule, the first and second columns give the number of the population in each *ward*, *street*, and *section of street*.

The third column gives the total number of inhabitants in Boston on the first day of May, 1855.

The next four columns give the number of persons of *each sex*, specifying the number of each *over* and *under* 21 years of age.

The next four columns relate to the *Foreign population* of our city, including the *children* under 21 years of age of foreign parentage.

The next column relates to the *colored* population.

The next four columns relating to *children* contain those *under* 5, and those *from* 5 to 15 years, distinguishing those of the last of native from those of foreign parentage.

The last two columns contain the number of *voters*, and give the number of *naturalized* voters separate from the *native* voters.



The following is the result of the Census this year, compared with the City Census of 1850.

		1855.	1850.	Increase.
POPULATION,	not including Washington Village, <sup>o</sup>	161,429	138,788	22,641
	{ Males, - - -	77,567	66,072	11,495
	{ Females, - - -	83,862	72,716	11,146
FOREIGNERS,	{ Irish, - - -	68,611	52,923	15,688
Including their	{ German, - - -	4,587	2,666	1,921
children under 21	{ Other Countries, - - -	12,309	7,877	4,432
years of age.	Whole number of foreigners,	85,507	63,466	22,041
COLORED,	- - - - -	2,216	2,085	131
	{ Under 5 years of age, -	20,212	17,084	3,128
CHILDREN,	{ Between 5 and 15, natives,	11,800	12,143	loss 343
	{ Of foreign parentage, -	16,964	12,132	4,832
VOTERS,	{ Native, - - -	18,627	16,237	2,390
	{ Foreign, - - -	4,564	1,549	3,015

## POPULATION.

It is gratifying to find that Boston has made so large an increase since 1850, notwithstanding the removal of so many of the residents to the neighboring towns. Below is given the population of Boston at different periods.

Year.	Population.	Increase.	Per cent.
1820, . . . .	43,298		
1825, . . . .	58,281	14,983	34.60
1830, . . . .	61,392	3,111	5.33
1835, . . . .	78,603	17,211	28.03
1840, . . . .	85,000	6,397	8.14
1845, . . . .	114,366	29,366	34.54
1850, . . . .	138,788	24,422	21.35
1855, . . . .	162,748	23,960	17.25

The enumeration of 1855, includes Washington Village, formerly a part of Dorchester, but annexed to

<sup>o</sup> Washington Village was annexed to Boston, May 21, 1855. An enumeration of the inhabitants made in June, 1855, gave the number as 1319—this, added to the Census taken in May, gives the population of Boston in 1855, 162,748.

Boston this year. This section contains 1,319 inhabitants which deducted from 162,748, makes the actual increase of Boston, for the last five years, 22,641, or 16.31 per cent. It will be perceived that the ratio of increase for the last five years is a little less than for the five or ten preceding years. This is not owing, however, to any diminution in the comparative progress and increase of the business of Boston, for facts are abundant to prove a steady and rapid increase in the business and wealth of the city, equal to if not greater than any former period. During the last five years many dwelling houses have been displaced in or near the business sections of the City by immense warehouses, which noble structures give evidence of the enterprise and prosperity of the metropolis of New England, while they crowd out the population into the suburban towns, the measure of whose growth is in a great degree the measure of the prosperity of Boston. It is a fact well known, that many of the business men who reside in the suburbs would return to the City and make it their home if tenements of convenient size and moderate rent could be obtained.

It is impossible to determine exactly the number of persons engaged in business in Boston, and residing out of the City; but it is estimated that the number, including their families, is upwards of 40,000. This estimate is founded upon the number of season tickets sold at the railroad depots, and by inquiries made of the proprietors of the omnibus lines, bridges, &c., and also from an estimate from the names in the Boston Directory of persons living out of the City.

## WARDS.

The following table, showing the population by wards in 1855 and 1850, is of interest, as exhibiting the growth of the several wards in the City:

	1855.	1850.	Increase.	Loss.	Per cent.
Ward 1, . . . .	19,264	16,829	2,435		14.46
" 2, . . . .	15,963	9,851	6,112		62.04
" 3, . . . .	13,175	11,788	1,377		11.67
" 4, . . . .	7,912	8,578		666	7.76
" 5, . . . .	10,428	9,756	672		6.88
" 6, . . . .	11,597	10,224	1,373		13.42
" 7, . . . .	18,430	17,104	1,326		7.75
" 8, . . . .	12,690	11,479	1,211		10.55
" 9, . . . .	9,541	8,927	614		6.87
" 10, . . . .	12,553	10,453	2,100		20.84
" 11, . . . .	13,164	10,480	2,784		26.56
" 12, . . . .	16,612	13,309	3,303		24.81
Washington Village,	161,429	138,788			
	1,319				
Deduct Loss, . . . .	162,748		23,307	666	
			666		
			22,641		16.31

The encroachment of business upon the central wards is made evident by these figures. In other sections, especially East and South Boston, quite a large gain has been made. Ward 11 exhibits a greater percentage of increase since 1850, than any other ward in Boston proper. Many dwellings have been erected here, a large number of which are of great cost and beauty. This section of the City is doubtless destined, at no distant period, to become very populous. The opportunity presented for good and pleasant residences on the Neck, and at East and South Boston, should

claim the attention of our citizens before erecting dwellings in other towns.

The population of Boston would, doubtless, be materially augmented, if portions of the City Lands were offered for sale at *reduced prices*, with the condition that tenements should be erected, adapted for persons in moderate circumstances.

*Population, &c., of Boston by Wards, in 1855.*

POPULATION BY WARDS.

7

WARDS.	POPULATION.				FOREIGNERS.				Colored.	CHILDREN.			VOTERS.		
	Total No.	Males.		Females.	Ireland.	Germany.	Other Countries.	Under 21.		Under 5.	5 to 15.		Natives.	Foreign.	
		Over 21.	Under 21.								Natives.	Foreign			
1.	19,264	5,555	4,209	5,396	4,104	10,068	226	2,171	5,721	210	2,807	1,074	2,435	1,437	715
2.	15,963	4,445	3,667	4,112	3,739	5,572	399	2,707	4,097	50	2,400	1,423	1,804	1,458	460
3.	13,175	4,252	2,433	3,877	2,613	6,299	164	790	3,063	65	1,547	685	1,197	1,818	426
4.	7,912	2,675	1,202	2,477	1,558	3,110	60	393	1,271	59	530	438	493	1,530	158
5.	10,428	2,878	1,940	3,501	2,109	2,477	92	553	1,307	194	1,055	1,060	493	1,842	148
6.	11,597	2,929	1,955	4,417	2,296	1,892	96	629	754	1,386	977	1,442	348	2,103	185
7.	18,430	5,060	3,908	5,544	3,918	13,276	86	1,025	6,494	22	2,606	434	2,907	1,090	597
8.	12,690	3,541	2,447	4,136	2,566	6,400	529	771	3,340	46	1,445	605	1,511	1,314	272
9.	9,541	2,435	1,829	3,223	2,054	2,432	938	484	1,744	16	1,089	931	745	1,352	238
10.	12,553	3,277	2,542	4,004	2,730	4,770	503	918	2,950	33	1,629	977	1,282	1,613	355
11.	13,264	3,192	2,934	3,950	3,188	4,455	1,257	435	3,037	69	1,712	1,401	1,422	1,628	336
12.	16,612	4,234	4,028	4,414	3,936	7,860	232	1,433	4,776	66	2,415	1,330	2,327	1,442	674
Wash'n } village. }	161,429	44,473	33,094	49,051	34,811	68,611	4,587	12,309	38,574	2,216	20,212	11,800	16,964	18,627	4,564
	1,319	315	334	348	322	625	3	233	436	4	259	98	231	76	75
Total,	162,748	44,788	33,428	49,399	35,133	69,236	4,590	12,542	38,990	2,220	20,471	11,898	17,195	18,703	4,639



*Population, &c., of Boston by Wards, in 1850.*

This table embraces items of information obtained by the City Census of 1850, and of the same character as that of the present year, and in various ways will be found of interest and use.

WARDS.	POPULATION.				FOREIGNERS.				CHILDREN.			VOTERS.			
	Total No.	Males.		Females.		Ireland.	Germany.	Other Countries.	Colonized.	Under 5.	5 to 15.		Native.	Foreign.	
		Over 21.	Under 21.	Over 21.	Under 21.						Natives.	Of Foreign Parentage.			
1.	16,829	5,059	3,350	4,772	3,648	7,187	257	1,559	4,026	191	2,302	1,223	1,689	1,364	147
2.	9,851	2,455	2,487	2,314	2,595	4,026	200	123	2,251	31	1,166	1,150	766	1,129	251
3.	11,798	3,661	2,234	3,481	2,422	4,764	85	542	2,333	34	1,323	809	942	1,383	104
4.	8,578	3,029	1,380	2,830	1,339	3,280	50	337	1,337	87	640	521	609	1,492	60
5.	9,756	2,496	1,928	3,224	2,108	2,028	79	353	1,041	247	1,058	1,142	427	1,476	30
6.	10,224	2,456	1,820	3,825	2,123	1,680	79	431	764	1,246	1,013	1,427	256	1,439	31
7.	17,104	4,645	3,593	5,168	3,698	10,703	104	889	5,388	16	2,289	675	2,283	1,301	201
8.	11,479	3,014	2,221	3,931	2,313	4,873	313	629	2,647	25	1,299	740	1,203	1,403	143
9.	8,927	2,080	1,829	2,949	2,069	1,883	463	686	1,483	34	1,143	1,059	597	1,336	122
10.	10,453	2,689	2,093	3,229	2,442	3,777	209	574	2,181	26	1,373	958	932	1,355	72
11.	10,480	2,469	2,400	3,020	2,591	3,116	666	712	2,306	103	1,589	1,159	1,036	1,321	144
12.	13,309	3,412	3,272	3,501	3,124	5,606	161	1,042	3,155	40	1,889	1,280	1,396	1,238	244
Total,	138,788	37,465	28,607	42,244	30,472	52,923	2,666	7,877	28,912	2,085	17,084	12,143	12,132	16,237	1,549



## FOREIGN POPULATION.

In the last City Census Report, as well as in this, the children of foreigners, under 21 years of age, have been classed as foreigners. Although many of them were born in this country, yet, subject as they are to the control, instruction, and associations of their parents, they properly belong to, and are under the influence of the foreign element.

The increase of Boston during the last five years, is 22,641 ; of this number 22,041 are of foreign origin, and 600 are native inhabitants. The following table gives the loss and gain of the population by wards.

NATIVE AND FOREIGN POPULATION IN EACH WARD.

NATIVE POPULATION.					FOREIGN POPULATION.				
Wards.	1855.	1850.	Gain.	Loss.	Wards.	1855.	1850.	Gain.	Loss.
1	6,799	7,826		1,027	1	12,465	9,003	3,462	
2	7,285	5,502	1,783		2	8,678	4,349	4,329	
3	5,922	6,407		485	3	7,253	5,391	1,862	
4	4,349	4,911		562	4	3,563	3,667		104
5	7,306	7,296	10		5	3,122	2,460	662	
6	8,980	8,034	946		6	2,617	2,190	427	
7	4,043	5,408		1,365	7	14,387	11,696	2,691	
8	4,990	5,664		674	8	7,700	5,815	1,885	
9	5,687	5,895		208	9	3,854	3,032	822	
10	6,357	5,893	464		10	6,196	4,560	1,636	
11	7,117	5,986	1,131		11	6,147	4,494	1,653	
12	7,087	6,500	587		12	9,525	6,809	2,716	
	75,922	75,322				85,507	63,466		
	Actual Gain,		600			Actual Gain,		22,041	

From this statement it seems that in wards 1 and 7, the native loss is considerable, and yet there is an increase in the number of inhabitants in these wards from the foreign part of the community.

In wards 2, (East Boston) 6, (Beacon Hill) 11, (the Neck) and 12, (South Boston) the native gain is fair, and as it is to these sections we are to look for maintaining the predominance of the native and permanent population of the City, every inducement and facility should be extended to those who will settle in these inviting localities.

While Boston welcomes the foreigner, bestowing encouragement and charity upon him, speedily investing him with the rights of citizenship, and a frequent participation in the management of municipal affairs, the City should not be unmindful of the trust transmitted to it; but guard with patriotic care the glorious institutions bequeathed by a noble ancestry. History and common sense show this can most effectually be secured by the native inhabitants, and hence all proper endeavors should be made to maintain in Boston a large predominance of native-born citizens.

#### CHILDREN.

The number of children between the ages of 5 and 15 in 1855, is 28,764—in 1850, they were 24,275—being a gain of 4,489. The native loss is 343, while the foreign gain is 4,832. The number under 5 years of age is 20,212, being 3,128 more than in 1850.

These numbers do not include the children in Washington Village.

#### VOTERS.

The number of voters was found to be 23,191, of whom 18,627 were native, and 4,564 naturalized;

showing an increase since 1850 of 2,390 of the former, and 3,015 of the latter class.

The increase of native voters has therefore been but 14.72 per cent. while the foreign voters show the remarkable gain of 194.64 per cent. This fact gives evidence of an awakened interest on the part of those born in foreign countries to avail themselves of the elective franchise.

The number of voters on the Assessors' books in

1840,	was	14,474	1852,	was	21,203
1845,	"	20,351	1853,	"	23,792
1848,	"	21,543	1854,	"	24,157
1849,	"	21,239	1855,	"	24,272
1850,	"	21,220			

DWELLING HOUSES.

The following table gives the number of dwelling houses and families in each ward.

INHABITED HOUSES AND FAMILIES.

Houses.	Wd 1	Wd 2	Wd 3	Wd 4	Wd 5	Wd 6	Wd 7	Wd 8	Wd 9	Wd 10	Wd 11	Wd 12	Total.
Inhab. by 1 Fam.	1030	785	581	463	808	1045	470	692	689	656	1052	1203	9474
" 2 "	264	616	223	60	306	257	95	153	308	278	365	582	3507
" 3 "	166	150	127	29	84	93	63	75	76	102	112	107	1184
" 4 "	113	50	80	14	34	42	55	52	26	58	61	48	633
" 5 "	76	18	53	7	14	12	52	37	12	33	17	21	352
" 6 "	60	6	30	11	7	9	73	29	15	27	8	9	284
" 7 "	21	4	12	5	3	3	77	28	4	18	9	5	189
" 8 "	10	3	9	5	1	1	60	17	4	9	5		123
" 9 "	8	4	3	1			31	5		8		1	56
" 10 "	7		1	3			14	2			1		30
" 11 "	5			1		1	12	3				1	23
" 12 "	1		1				2						4
" 13 "	2							1		2		1	6
" 14 "	1	1					2			1			5
" 15 "			1										1
" 16 "							2						2
" 18 "		1											1
" 20 "	1						1		1				3
" 24 "								1					1
" 32 "										1			1
" 33 "								1					1
Whole No. of Inhabited Houses.	1765	1638	1121	599	1256	1463	1009	1096	1187	1188	1630	1978	15,880
Whole No. of Families.	3744	2913	2393	952	1941	2160	3441	2290	1887	2374	2608	3107	29,810
Av. No. of Fam. to one house.	2.12	1.77	2.13	1.58	1.54	1.47	3.41	2.08	1.65	1.99	1.60	1.57	1.87
Av. No. persons to one house.	10.91	9.74	11.73	13.20	8.30	8.92	18.26	11.57	8.39	10.56	8.13	8.39	10.16
Av. No. persons to one Family.	5.14	5.48	5.50	8.31	5.37	5.37	5.35	5.54	5.05	5.29	5.08	5.34	5.41

Since this City Census was taken, another enumeration of the inhabitants has been made, in compliance with a law passed by the Legislature, May 21, 1855, requiring a Census of the State to be taken on the first of June next following, and every tenth year afterwards. This Decennial Census, with the National Census, will secure an enumeration of the population of Massachusetts every five years, and therefore a special Census of Boston will not be necessary in future.

The population of the City, by the Census, on the first of May this year, was 161,429; but by that of June 1st, it was 160,508. If we deduct from the latter, the population of Washington Village, (1319) which was annexed to Boston after the Census of May 1, and previous to that of June 1, there appears a falling off of 2,240, during the month of May.

A similar result was shown by the two enumerations taken—one, May 1, and the other June 1, 1850. This periodical decrease may be accounted for in part from the fact that during the months of May and June, a great number of persons leave the city for a residence in the country.

As a large proportion of this number are properly citizens of Boston, and return again at the close of the warm season, the number given on the first of May should be regarded as approaching nearest to the actual population of Boston.

The foregoing statements seem to comprise all the facts it may be my duty to allude to, and thanking you for the interest you have evinced in the work, I remain very respectfully, yours, &c.,

GEORGE ADAMS.

*Boston, Dec, 8, 1855.*



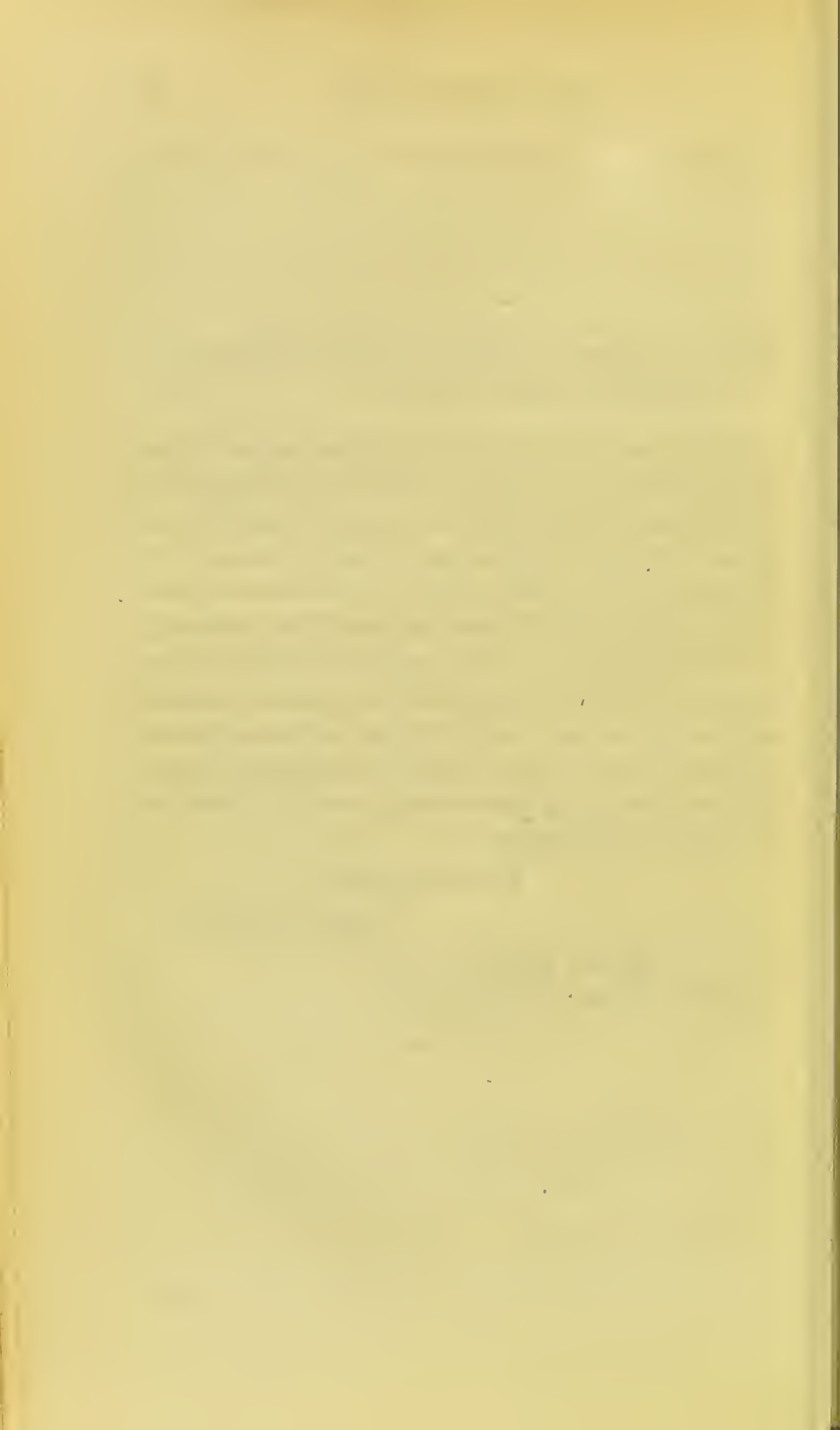
*To the Joint Special Committee of the City Government on  
the Census of Boston in 1855.*

GENTLEMEN :—In compliance with your request I herewith transmit to you some analyses and deductions of the Census of the City, taken on the first of May last, together with a comparative view of the population, with the mortality, &c., since 1850 ; and a few hints on some of the elements which affect the health and prosperity of our inhabitants. In the latter will be found some general remarks and suggestions on epidemics, intramural interments, and model lodging houses—topics of peculiar interest to our citizens at the present time.—The whole subject seems eminently worthy of attention and careful investigation.

Yours respectfully,

JOSIAH CURTIS.

25 WINTER STREET, }  
*Boston, December 25, 1855.* }





## SUMMARY OBSERVATIONS,

ANALYTICAL AND SANITARY:

BY J. CURTIS, M. D.

In ancient times, as is intimated in both sacred and profane history, the numbering of the people was held in important respect. In modern days statistics have advanced and taken a position among the sciences. It is, however, but little more than a quarter of a century since the Society of Universal Statistics was founded in France. This society seems to have manifested their relative regard for *vital statistics*, by placing them in the first division of the general subject which embraces "topography, hydrography, meteorology, *population, man physically, hygiene, and the sanitary condition.*" In the next department they classed "agriculture, industry, commerce, navigation, the state of science, literature, the fine arts," &c. Then followed the division of moral and philosophical statistics, such as "religious worship, legislative and judicial powers, public administration, finance, military," &c.

At the present time, every civilized nation regards as of the highest interest and importance, statistics pertaining to the numbers of the people, and their social, moral, industrial and educational condition. Some countries are in advance of others in this particular, and have already made the most instructive contrasts,

comparisons, and deductions, and thereby furnished the soundest lessons and rules for promoting the general welfare of society, as well as for the administration of government.

From these considerations, statistical investigations command a constantly increasing interest in the United States, and it affords us some satisfaction to know that our own Commonwealth stands second to no other State in the Union. Mr. De Bow, the Superintendent of the last United States Census, says of Massachusetts : "This State is in advance of every other in the extent and accuracy with which it presses statistical investigations, and is worthy of all praise. Nothing is too minute to escape attention, and among her citizens are the first statisticians of America." She is now reaping benefits from what has already been done, and other States are also profiting by her example.

It is fitting then that the chief city, and perhaps most important and influential local community in the Commonwealth, should, at stated periods, present to its citizens, in an intelligible form, such comparisons and conclusions as may be drawn from official investigations, which present an exhibit of the various elements that affect the life, health and prosperity of the population. Such information is due not only to considerations of the passing moment, but also to posterity, inasmuch as it embodies valuable knowledge in the current history of the times.

The Census of the City of Boston in the present year, and which is herewith for the first time officially published, comprises the first enumeration of our citizens, with accompanying facts, that has been made

in the last half of the present century. We are therefore just starting from a new point in the artificial division of progressing time. It is then a fitting position not only to contemplate the present, but also, as we have observed elsewhere on another occasion, to glance somewhat into the more immediate past, and allow the lessons thus reflected to cast their light upon the future.

The present quinquennial Census of the City of Boston, was taken on the first of May, 1855, under the authority of the City Government, by Mr. George Adams. It bears the unquestionable evidence of great accuracy and thoroughness, such as characterizes all of this gentleman's statistical labors, in his large experience.

In pursuing our comparisons on various points in the Census of 1855, with that of 1850, we shall have frequent occasion to recur to the valuable labors\* in 1850 and 1851, of our lamented friend, the late Jesse Chickering, M. D., whose death was a public loss.

There are two principal ways in which the increase of population is effected. The first is by propagation, and may be termed the natural increase. This moves in a geometrical ratio, and may be measured by the excess of births over deaths in any given space of time. This method of natural increase is susceptible of numerical calculation under the same rules as capital at compound interest, the rate of increase being taken as the rate of interest.

The second, or foreign increase, is caused by immi-

\* City Doc., No. 42, 1850 ; and City Doc., No. 60, 1851.

gration, and is much more variable, depending upon quite a list of circumstances, more or less of which are at any time liable to change. The amount of this mode of increase in any given time, may be measured by the excess of immigration over emigration. Most large communities, especially in this region, are affected much more by this latter increase, than by the natural. Such is the case in Boston. We shall therefore have to deal with both these elements in analyzing the Census of our City, and shall find that the foreign increase is by far the most important in numbers. For various reasons however the immigration from foreign countries, and especially some of them, has been much less since than prior to 1850.

In 1851 the Legislature established a Board of Commissioners of Alien Passengers and Foreign Paupers; and each year since has added considerable State legislation on this subject. The changes thus effected in these laws, have doubtless had no little influence, to say nothing of sentiments expressed freely, and in various ways, by the people at large. In 1850 there were no less than 38,356 foreigners landed at Boston by water. The following statement will show the numbers since, as furnished by A. G. Goodwin, Esq., the gentlemanly Superintendent of Alien Passengers.



Years.	Arrived by water. <sup>o</sup>	Arrived by land.	Sent out of the State.	*Arrived by water, who had been in the State before. <sup>o</sup>
1851	23,100	16,654	112	6,119
1852	23,783	12,788	132	2,143
1853	23,040	14,097	88	5,479
1854	24,268	13,195	187	6,738
1855	12,725	10,836	1,251	8,128

<sup>o</sup> The numbers in the last column are *not* included in the first column.

Those arriving by water came mostly from Liverpool; those by land, were foreigners who had arrived at some other port and came to Boston by railroad, and were mostly from New York and the Canadas. It is not to be understood that all actually settled in our City, nor indeed the larger part of them, especially of those coming by water, who were in transit from a foreign home for a residence principally, perhaps, in the West. Of those coming by land, a much larger portion came to stay with us; thus, in 1853, 14,097 foreigners arrived by railroad. Of these, 10,662 intended to remain, viz.: 5,287 in Boston, and 5,375 in other parts of this State, while only 1,949 went to the West. During the same year there were 58 sent back to Liverpool. We have not been able to obtain similar facts for other years.†

† While passing through the press, we have been able to append the following extract from the Address of his Excellency, Governor Gardner, to the Legislature, January 3, 1856. It relates to the year 1855, and only to a single class of immigrants.

“Under the vigilant and systematic supervision of the present officers, the State has been relieved during the year of the support of the following number of paupers:

Sent from Boston to Liverpool,	-	-	-	-	-	-	295
“ “ “ various other places where they had settlements,	-	-	-	-	-	-	341
And, under the law of May 24th, 1851, there have been returned to various places out of the State from Boston,	-	-	-	-	-	-	378
							1,014



The official statements from the Commissioners of Emigration in the City of New York, show that while the number of immigrants to that city from England, Germany, and Switzerland, during the year 1854, was larger than in 1853, the number coming from Ireland and Scotland had greatly decreased; the number from Ireland in 1853, being 113,164, and in 1854, only 82,302, or 30,862 less than the year before. The decrease in 1853, upon the aggregate immigration in 1852, was 16,046, or 5.33 per cent. If similar results should be made to appear in the immigration to the port of Boston, we should be led to the conclusion, that the foreign increase among the actual residents of our City had also diminished somewhat within the past five years. It has not diminished sufficiently, however, to deprive this foreign source of its elevated rank in the causes which are still at work in augmenting the number of our inhabitants.

From State Alms House at Tewksbury, - - - - -	114
“ “ “ “ “ Bridgewater, - - - - -	119
“ “ “ “ “ Monson, - - - - -	61
	<hr/>
	294
Total, - - - - -	1,308

Had the laws not been thus enforced, it is believed that every one of these persons would now be inmates of our State Institutions, at a cost this year of at least *one hundred thousand dollars*, and the same amount per annum, hereafter, while they remained. Nearly every one of those shipped to Liverpool went with their own consent, though some of the number, it appeared, were originally sent to this country as criminals or paupers. Had they been retained here, and we continued to allow our State to be the receptacle of the vicious, the degraded and the insane, whom foreign parsimony and cruelty might deliberately and unfeelingly send to our shores, additional Almshouses and Hospitals would be necessary for their shelter and confinement. Christian philanthropy should be exercised, as heretofore, in everything relative to their return; but they should be sent back systematically, uniformly and speedily.”

On the 21st of May, 1855, a portion of Dorchester known as "Washington Village," was annexed to the City of Boston. This will not affect any of our calculations or remarks on the present Census of the City, which was taken the first day of May, just twenty days previous. An enumeration of the inhabitants of Boston was taken, on the first of June, 1855, by order of the last Legislature. This was just one month after that, which was taken by order of the City government, and was also after the annexation of Washington Village to the City. It may be well here to state that this village contained 1,319 inhabitants on the first of June; farther than this, it will not be necessary for us to allude to this annexed district, or its population.

The population of Boston did not increase as much between 1850 and 1855, as during the preceding five years, as will be seen by the following abstract:—

Years.	POPULATION.		PER CENTAGE.		INCREASE.		PER CENT.	
	American	Foreign.	American	Foreign.	American	Foreign.	American	Foreign.
1845	77,077	37,289	67.40	32.60				
1850	75,322	63,466	54.27	45.73	-1,755	26,177	-2.27	70.20
1855	75,922	85,507	47.02	52.98	600	22,041	.80	34.73

By the foregoing, it will be observed that the population of the City increased 24,422 during the five years intervening 1845 and 1850, while the increase from the latter date to 1855, was a little less, being 22,641.

The most remarkable feature in connection with this augment, pertains to that portion of it relating to the *foreign population*. Of the 114,366 that comprised the

whole population in 1845, the American portion embraced no less than 77,077, or 67.40 per cent. while the foreign portion was only 37,289, or 32.60 per cent. In 1850, the population was 138,788. Of these the American portion comprised only 75,322, or 54.27 per cent. *having decreased* 1,755, which was a *loss* of 2.27 per cent. on the American portion of the population of 1845. But during the same five years, viz., from 1845 to 1850, the foreign population in Boston, had increased no less than 26,177, or 70.20 per cent. on the number of foreigners in 1845. Of the population in 1855, (161,429) the Americans constitute 75,922, or 47.02 per cent., and those of foreign origin, 85,507, or 52.98 per cent. Instead of decreasing, as was the case during the former five years, they have increased 600 or .08 per cent., while those of foreign origin have increased in the same time, 22,041, being only 34.73 per cent., against 70.20 per cent., during the preceding five years. Although the rate of increase in the foreign population was not quite one-half as great since 1850 as it was during the five years immediately preceding, yet it has been sufficient, as was anticipated, to change the majority of the whole population of our City from the American to the foreign side. On the first of May, 1855, we find that there were 9,585 more of foreign birth, (including their children,) than there were of native citizens. It will be very difficult to name a day in the future, when the number of American citizens, in the distinctive sense that this term is commonly used, will again constitute a majority of those who shall inhabit the present limits of Boston.

It is also here worthy of remark, that while native



voters have increased only <sup>14.72</sup>~~30.38~~ per cent. since 1850, the foreign voters have increased three-fold, or no less than 194.64 per cent.

The annexed statement will show the population of the City, with the rate of increase during each quinquennial period of the last thirty years.

POPULATION OF BOSTON AT DIFFERENT PERIODS.

Years.	Population.	Increase.	Per cent.
1820, . . . .	43,298		
1825, . . . .	58,277	14,979	34.59
1830, . . . .	61,392	3,115	5.34
1835, . . . .	78,603	17,211	28.03
1840, . . . .	85,000	6,397	8.13
1845, . . . .	114,366	29,366	34.54
1850, . . . .	138,788	24,422	21.35
1855, . . . .	161,429	22,641	16.31

In contemplating the result of the present census, the fact must not be forgotten, that a very large number of those who do business in Boston reside out of town with their families and households, (estimated at 40,000,) and that this practice has chiefly grown up within the last ten years. The aggregate number of the population is thus greatly reduced below the number which would appear, if all those were included who by their industry contribute to its wealth and draw from it their livelihood, as is usually the case in estimating the population of other cities.

The following tables will show some interesting points respecting several classes of the population which are therein defined.

TABLE I.

*Exhibiting the number and per cent. of several specified classes of the population of Boston in 1850, and 1855, together with the increase of each class during the five years embraced.*

	POPULATION 1855.		POPULATION 1850.		INCREASE.	
	Number.	Per cent.	Number.	Per cent.	Number.	Per cent.
A. ACCORDING TO AGE AND SEX.						
<i>Under 21 years of age. Males,</i>	33,094	20.49	28,607	20.62	4,487	15.69
<i>" " " " Females,</i>	34,811	21.57	30,472	21.95	4,339	14.20
<i>" " " " TOTAL,</i>	67,905	42.06	59,079	42.57	8,826	14.94
<i>Over 21 years of age. Males,</i>	44,473	27.55	37,465	26.99	7,008	18.71
<i>" " " " Females,</i>	49,051	30.39	42,244	30.44	6,807	16.11
<i>" " " " TOTAL,</i>	93,524	57.94	79,709	57.43	13,815	17.33
<i>Entire Male population, - - - -</i>	77,567	48.05	66,072	47.61	11,495	17.39
<i>" Female " - - - -</i>	83,862	51.95	72,716	52.39	11,146	15.33
<i>TOTAL POPULATION,</i>	161,429	100.	138,788	100.	22,641	16.31
B. ACCORDING TO ORIGIN.						
<i>Americans. White,</i>	73,706	45.67	73,237	52.77	469	.64
<i>" " Colored,</i>	2,216	1.35	2,085	1.50	131	.63
<i>Total American population,</i>	75,922	47.02	75,322	54.27	600	.80
<i>Irish (and their children,)</i>	68,611	42.51	52,923	38.13	15,688	29.64
<i>German (and their children,)</i>	4,587	2.84	2,666	1.92	1,921	71.52
<i>Other foreign (and their children,)</i>	12,309	7.63	7,877	5.68	4,432	56.27
<i>Total Foreign population,</i>	85,507	52.98	63,466	45.73	22,041	34.73
<i>TOTAL POPULATION,</i>	161,429	100.	138,788	100.	22,641	16.31
C. VOTERS.						
<i>Native American, - - - - -</i>	18,627	80.32	16,237	91.29	2,390	14.72
<i>Naturalized Foreign, - - - - -</i>	4,564	19.68	1,549	8.71	3,015	194.64
<i>Total Voting Population,</i>	23,191	100.	17,786	100.	5,405	30.38



TABLE II.

		1855.		1850.			
		Number.	Per cent.	Number.	Per cent.	Increase.	Decrease.
Under 5 years of age,		20,212	12.52	17,084	12.31	3,128	
“ 15 “ “		48,076	30.34	41,359	20.80	7,617	
“ 21 “ “		67,905	42.06	59,079	42.57	8,826	
Between 5 and 15.	American,	11,800	7.31	12,143	8.75		343
“ “ “	Foreign,	16,064	10.51	12,132	8.74	4,832	
“ “ “	TOTAL,	28,764	17.82	24,275	17.49	4,489	
Under 21.	American,	20,351	18.18	30,167	21.74		816
“ “	Foreign,	38,554	23.88	28,912	20.83	9,642	
“ “	TOTAL,	67,905	42.06	59,079	42.57	8,826	
Over 21.	American,	46,571	28.85	45,155	32.53	1,416	
“ “	Foreign,	46,953	29.00	34,554	24.90	12,399	
“ “	TOTAL,	93,524	57.94	79,709	57.43	13,815	
Total population,		161,429	100	138,788	100	22,641	

In the foregoing table (I.) will be found the number of the several classes there named, in the years 1850, and 1855, together with the *percentage* or *proportion* which each class bore to the whole population in each of the census years. These comprise the first four columns. The last two columns show the increase of each class during the five years together with the *per cent. of that increase over the number in 1850.*

It will be observed that the males increased 11,495, or 17.39 per cent., while the females increased 11,146, or 15.33 per cent., making the total increase 22,641, or 16.31 per cent. There was a larger increase among those over 21 years of age, than among those under that age; the former being 13,815, or 17.33 per cent. to 8,826, or 14.94 per cent. of the latter. But in each of these divisions the males furnish a larger increase than the females, as might have been anticipated, from the general and well founded opinion, that more males

than females are coming from the country to take up a residence in the City. It is also in accordance with the fact that, a larger number of males are emigrating from foreign countries, than females. This excess in the increase among the male population, over that of the female population, has not been sufficient to bring the former in the majority, in the total population of the City. It has only reduced the female majority a little more than three-fourths of one per cent. below what it was in 1850. The difference in the sexes in 1855 is 3.90 per cent. In 1850 it was 4.78. A predominance of female population exists in the whole State, but it is greater in the civic than in the rural communities. In some cities as Lowell and Lawrence, it is very great, while in others, as Lynn and Salem, it is comparatively quite small.

The schedule for taking the census did not designate the numbers of Americans over and under 21 years of age ; but from the facts given, we have been able to deduce these numbers and have given them in Table II., in connection with those of foreign origin of the same ages.

By this table it will be noticed that one-eighth of our population are under five years of age ; and nearly one-third (30.34 per cent.,) are under 15 ; all of whom may be termed one portion of the dependent class of the community ; the other portion being in advanced life. It will also be noticed that between four-tenths and one-half (42.06 per cent.) are under 21. Of these the majority of foreign has very much increased since 1850.

Of those between the ages of 5 and 15 in 1850, the Americans and those of foreign parentage were very

nearly equal, but since then the former have actually decreased 343, while the latter have increased 4,832, placing these in quite a large majority over those. A decrease of the American population under 21 years of age, has also taken place, during the past five years, to the number of 816, while the foreign portion under 21, have increased no less than 9,642 in the same time, thereby very much increasing the majority of this division. In the general increase of neighboring communities, we have no means of determining whether or not, the same results have obtained. The following figures will exhibit the population of the cities of the Commonwealth in 1850 and 1855, as obtained by the State Census. They are taken from the 13th Registration Report, prepared for the Legislature by our friend and distinguished fellow-citizen, Dr. N. B. Shurtleff.

Cities.	POPULATION.		Increase.	Cities, (including the town of Taunton.)	POPULATION.		Increase.
	1855.	1850.			1855.	1850.	
Boston, . . .	161,429	136,884	22,641	Roxbury, . .	18,609	18,373	236
Lowell, . . .	37,553	33,385	4,168	Lawrence, . .	16,114	8,283	7,831
Worcester, . .	22,284	17,059	5,125	Lynn, . . .	15,713	14,257	1,456
Charlestown, .	21,742	17,216	4,526	Springfield, .	13,780	11,766	2,014
Salem, . . .	20,934	20,263	671	Taunton,* . .	13,750	10,431	3,319
Cambridge, . .	20,473	15,215	5,258	Newburyp't, .	13,380	9,572	3,808
N. Bedford, . .	20,391	16,464	3,927	Fall River, . .	12,080	11,522	558

We also subjoin some of Dr. Shurtleff's comments on this statement.

“It must be recollected, that since the taking of the

\* Taunton, though not a City, contains over 10,000 inhabitants, hence we have assigned it a place in the list.

United States Census in 1850, the boundaries of many towns in Massachusetts have been changed, and that in some instances, towns have been divided. West Roxbury has been set off from Roxbury, and the city of Lawrence considerably enlarged.

By a careful examination of the preceding table, it will be noticed that the increase in population has not been perfectly regular. The city of Salem, which, by the Census of 1850, stood the third in the State, is now the fifth, as regards the number of its inhabitants, and the city of Worcester, which was the sixth, now ranks as the third. Lawrence, now in the possession of a city government, has nearly doubled its population in the last five years, and stands seven higher in the list. Cambridge has gained two in the scale of precedence, while the newly-chartered city of Fall River has fallen back three.

In some of the towns the increase has been immense. In the city of Lawrence, the increase for five years has been 7,831, or about 95 per cent. In Roxbury, allowing for the reduction of its territory, the increase has been 3,687. Cambridge exhibits an increase of a little over 25 per cent. during the same space of time. Lowell shows a gain of 4,168, the preponderance of females over males being 7,807. In the city of Worcester, the increase during the five years has amounted to 5,125, or about 31 per cent.—the number of males being 10,940; females, 11,344; native born, 16,419; and foreign born, 5,865.”



## BIRTHS.

It would be interesting to know what rate of the increase in our population resulted exclusively from actual propagation. This fact however cannot be determined. In examining the Reports of the City Registrar, during the past five years, we find many points worthy of notice. They show that the births have been a little over 5,000 annually, and that a majority of these have been from parents of foreign origin. We have compiled some statements from the Reports named above, and here subjoin some of the facts which they exhibit.

TABLE III,

*Exhibiting the parentage of those born in Boston during each of the five years from 1850 to 1854, inclusive.*

BIRTHPLACES OF THE PARENTS.	1850.		1851.		1852.		1853.		1854.		TOTALS.	
	Fath.	Moth.	Fath.	Moth.	Fath.	Moth.	Fath.	Moth.	Fath.	Moth.	Fath.	Moth.
Boston, - - -	456	535	393	523	375	518	420	516	410	524	2,060	2,621
Mass., except Boston, -	533	501	558	434	475	409	446	425	533	475	2,545	2,294
Maine, - - -	306	393	303	379	290	400	293	374	248	336	1,440	1,882
New Hampshire, - -	297	227	275	221	233	211	273	193	270	182	1,398	1,034
Vermont, - - -	80	56	82	61	96	49	78	53	82	57	418	276
Connecticut, - - -	20	15	17	16	26	18	27	13	21	26	111	88
Rhode Island, - - -	12	14	22	21	15	27	21	20	19	23	89	105
Other United States, -	122	110	107	95	121	101	115	95	128	109	593	519
England, - - -	158	137	167	121	183	151	241	211	243	206	992	826
Scotland, - - -	53	39	62	39	66	37	60	48	81	57	322	220
Ireland, - - -	2,734	2,792	2,749	2,804	2,785	2,842	2,927	3,044	2,824	2,956	14,019	14,438
France, - - -	21	13	13	13	24	10	23	9	36	7	117	52
Germany, - - -	161	140	173	153	196	166	234	224	315	265	1,129	948
British Provinces, -	151	175	140	206	169	217	209	245	210	216	879	1,059
Other Countries, - -	62	54	88	16	56	23	44	22	41	39	291	159
Unknown, - - -	60	16	149	142	96	72	77	52	191	174	573	455
Total,	5,226	5,226	5,298	5,298	5,256	5,256	5,544	5,544	5,652	5,652	26,976	26,976

SUMMARY.  
(Unknown excluded.)

New England, - - -	1,704	1,741	1,650	1,710	1,560	1,632	1,564	1,594	1,583	1,623	8,061	8,300
Other United States, -	122	119	107	95	121	101	115	95	128	109	593	519
Foreign, - - -	3,340	3,350	3,392	3,352	3,479	3,451	3,788	3,803	3,750	3,746	17,749	17,702



The foregoing Table (III.) will be found to exhibit points of much consideration. It will be seen that in the City of Boston, the births from foreign parentage during the past five years, have been more than twice the number of those from parents who were born in this country. The foreign fathers were 17,749, and the foreign mothers were 17,702, being a mean of  $17,725\frac{1}{2}$ , while the American fathers were only 8,654, and the American mothers 8,819, furnishing a mean of  $8,236\frac{1}{2}$ .

This disparity of foreign and American parentage among the births has been increasing for quite a number of years past. It will further be noticed on examination of the Table that a very large proportion of the foreign parents are natives of Ireland.

The fact is also demonstrated that the natives of various countries very generally intermarry. Of the natives of Ireland, more males have married American females, than females have married American males. This excess of Irish males having married American females over Irish females having married American males, was only three in a hundred marriages. These remarks, of course, pertain to those who have been married a greater or less number of years, and are among the propagating class of the population. In relation to the natives of all other foreign countries than Ireland, if we except the natives of the British Provinces, we find that more males have married American females, than the reverse. This is doubtless owing, in part at least, to the fact that in years past, a greater preponderance of males over females have immigrated from other foreign countries than from Ireland.

In most of our neighboring cities we find the records show that the same general results obtain as in Boston, in relation to the excess of births of foreign parentage over those of native parents. During the year ending December 31, 1854, the births in Lowell were 1,086, of these 427 were of American parents, and 547 of foreign parents, and 16 had American fathers and foreign mothers, while 33 had foreign fathers and American mothers.

In Charlestown the births from American parents predominated over the foreign, but in Cambridge, there were in 1854, 232 American births to 418 foreign. In Roxbury, the same year, there were 170 American, to 371 foreign births; that is, births from foreign parents. In Dorchester they were much nearer equal. In Lawrence, the proportion of foreign births to the American, was about the same as that of Boston, namely, a little over two of the former to one of the latter. In Fall River, it was considerably greater than this. In the whole State the proportion of births of foreign parentage is very great, being no less than 36.75 per cent., showing that the foreign element holds an important position in the Commonwealth.

We here abstract from the Thirteenth Registration Report, a valuable statement on this subject, embracing the five years from 1850 to 1854, inclusive, where it will be observed that Suffolk is the only county in which the births from foreign, exceed those from American parents. We need not allude to other points made patent in the table.

TABLE IV.

*Exhibiting the whole number of Children born, severally, of American and Foreign Parentage, in each County of the Commonwealth, during the last five years, together with the Percentage in each County; and also the Percentage in each County compared with the Aggregate throughout the Commonwealth.*

PARENTAGE.	Whole No.	Barnstable.	Berkshire.	Bristol.	Dukes and Nantucket.	Essex.	Franklin.	Hampden.	Hampshire.	Middlesex.	Norfolk.	Plymouth.	Suffolk.	Worcester.
<i>Aggregate, - - -</i>	149,064	3,894	5,950	10,500	1,066	19,675	3,857	6,783	4,329	21,926	13,507	7,349	28,654	18,574
American, - - -	84,039	3,460	3,735	7,046	941	12,741	2,887	4,205	2,952	13,712	7,160	5,603	9,535	10,082
Foreign, - - -	54,771	363	1,664	3,157	65	5,353	458	2,188	919	9,685	5,918	1,164	18,470	5,373
Not stated, - - -	10,228	71	551	297	60	1,581	512	390	458	1,529	429	582	649	3,119
<i>Percentage in each County.</i>														
American, - - -	56.38	88.85	62.78	67.10	88.27	64.75	74.85	61.99	68.19	55.01	53.01	76.24	33.23	54.28
Foreign, - - -	36.75	9.33	27.97	30.07	6.10	27.21	11.88	32.26	21.23	38.85	43.81	15.84	64.46	23.93
Not stated, - - -	6.87	1.82	9.25	2.83	5.63	8.04	13.27	5.75	10.58	6.14	3.18	7.92	2.26	16.79
<i>Percentage of the Whole.</i>														
American, - - -	56.38	2.32	2.49	4.78	.63	8.55	1.93	2.80	1.98	9.19	4.80	3.76	6.39	6.76
Foreign, - - -	36.75	.25	1.12	2.13	.05	3.59	.32	1.48	.63	6.50	3.97	.79	12.32	3.60
Not stated, - - -	6.87	.05	.37	.20	.04	1.06	.34	.26	.31	1.02	.29	.39	.44	2.01



It is a somewhat curious and interesting general law that, among the births in any large community, the males predominate over females. It is not our intention here to enter into an extended investigation of this law, or state all of the reasons why this excess of males should vary in different communities and at different times. Some remarks by a writer in the *American Journal of Medical Sciences*, for July, 1854, are so pertinent on this point that we here abstract a few of his ideas. He says that, "nine months after the prevalence of the Cholera in Philadelphia, there was a remarkable diminution in the proportion of male births, and that subsequent investigations lead to the conclusion that, disease, exhausting labor, meagre diet, impure air, intemperance, and other social evils, exert depressing influences upon the number of male births." He adds his belief that, "all measures tending to promote the health and welfare of a population, whilst serving immediately to increase its capacities for profitable labor, tend also to promote the multiplication of the male sex. Thus, in England, the excess of male births, is but 5 per cent.; in France and Prussia, it is 6 per cent.; in Philadelphia, it is 7 per cent.; and in Kentucky, by its Registration Report, it is  $12\frac{1}{2}$  per cent.; in Massachusetts, in the cities and large towns, it is but 6 per cent., though reaching 9 per cent. among the agricultural population." Professor Tucker suggests as a query, whether the preponderance of male births be an original provision, or whether the greater vitality of that sex is not the cause of a less number being still-born or perishing in delivery. The latter point cannot be well determined, because in the

statistics of still-born children, the sex is too much neglected. We have sufficient reasons however to decide this suggested query of Professor Tucker satisfactorily.\*

In Boston, the excess of male births has seemed to have diminished somewhat below what it was formerly, and below the general average of other communities. During the five years, 1850—1854, it was but a little over 4 per cent., as will be noticed in the following exhibit of the number of each sex of those who have been born in this city, during that period.

BIRTHS.	1850.	1851.	1852.	1853.	1854.	TOTALS.
Males, - - - - -	2,681	2,788	2,651	2,815	2,939	13,874
Females, - - - - -	2,598	2,550	2,657	2,781	2,749	13,335
Total,	5,279	5,338	5,308	5,596	5,688	27,209
†Plurality cases included in the above.	53	40	52	52	36	233

This shows an excess of only 519 males in the total. The whole number born in the State and made subject of registration during the same period, was 149,054, being 76,482 males, and 71,861 females. The sex was

\* We have been able to collect from official sources, the number of *still-born* that have been recorded in several of the years since 1850, in the States of Massachusetts and Kentucky, and in the cities of New York, Philadelphia, and Washington, D. C., and find them to be 4,414 males, and only 3,090 females, leaving an *excess of 1,324 males*. The *premature* births in the cities of New York and Washington in two years, were 806, consisting of 442 males, and 364 females, leaving an *excess of 78 males*.

† The number of plurality cases, causes the difference between the number of births, as stated in this abstract, and the number of parents, in Table III., on page 30.



not stated in 711 cases. Here we find the male excess of those whose sex was stated, to be 4,621, or 6.43 per cent. The average for all of Europe is shown by the result of more than 70,000,000 of facts collected from authentic sources in different kingdoms, and for many succeeding years, to be 106 males to 100 females. The proportion varies from 109 males to 100 females in Russia, down to 104.62 males to 100 females in Sweden; Great Britain occupies the last place but one, being 104.75 males to 100 females.\*

° The subject suggested in the text here, is one of considerable interest and importance, as it contemplates a law in the progress of the human race. We are not aware that correct conclusions upon the point, have been given by any American writer. We venture to offer the following, (subject to correction,) which we fully believe will be substantiated by a greater bulk of facts in the future, than we have at the present day.

1. During the fecundating period of life, the number of the sexes is very nearly equal, much nearer than at either an earlier or later age.

2. First marriages produce more male than female offspring; but second, or subsequent marriages, especially of the female, are productive of more female than male births.

As a corollary to the above, we may add that the sexes are much nearer equally divided in children born out of wedlock: still, in most countries where such births are of comparatively common occurrence, there is a small excess of males; but in Massachusetts, all facts hitherto given, show an excess of females among illegitimate children.

3. The proportion of the sexes in children, varies according to the relative ages of the parents; thus, males predominate where the father is older than the mother, and females are in excess where the mother is older than the father; and the ratio of excess of either sex in births, follows very accurately the number of years that the age of the parent of the same sex, exceeds that of the other parent.

4. Finally, the excess of either sex in the offspring, not only corresponds to the excess in the age of the parent of the same sex, but also corresponds very accurately to the mortality that would take place in a period equal in duration to the interval between the ages of the parents; preserving thereby the balance of the sexes at the age of nubility—the period from which we started.

## MARRIAGES.

Many facts which, to superficial observation appear to be simply coincidences, are nevertheless, in the aggregate, capable of generalization, and thereby demonstrating an obedience to a rigid law. Such is the case with matrimonial alliances, and the indications they afford of the varying conditions of any community. We had occasion to investigate this subject a few years ago, in preparing the Eighth and Tenth Registration Reports, to the Legislature of this State. Time and reflection confirms us in sentiments we there expressed that, more generally than is supposed, do the variations in the number of marriages in any given community, in a series of years, mark the relative prosperity of that people during the same period. Any serious or extended calamity, as war in the country, famine, severe mortality, rise in provisions, or low wages, invariably produces a decrease of marriages, and their opposites, as peace, plenty, general health; also, progression in important scientific discoveries and inventions, has the effect to increase matrimonial unions. In this country, our observations and facts have not as yet been sufficiently extensive to enable us to deduce reliable conclusions upon this point so definite as to give them mathematical precision. But the subject is very ably discussed from extensive observations, covering a great number of years, in the Eighth and Ninth Registration Reports of England. In the earlier pages of these Reports, Major Graham, the Registrar-General, most clearly demonstrates "*that it is a fair deduction from the facts, that the marriage returns in England point*

*out periods of prosperity, little less distinctly than the funds measure the hopes and fears of the money market. If the one is the barometer of credit" he adds, "the other is the barometer of prosperity."*

The number of marriages in Boston has been constantly increasing from year to year, with a single exception, since 1850; but some years show a greater increase over their predecessor than others, as will be seen in the following statement.

TABLE V.

*Exhibiting the number of marriages recorded in Boston, also, showing the nativity of the parties; during the four years from 1851 to 1854, inclusive.*

NATIVITY.	1851.		1852.		1853.		1854.		TOTAL.	
	Male	Fem.	Male	Fem.	Male	Fem.	Male	Fem.	Male.	Female.
Boston, - - -	232	407	218	425	228	394	247	421	925	1,647
Mass., except Boston, -	361	278	352	286	380	291	365	278	1,458	1,133
Rest of New England, -	545	479	503	435	481	453	541	470	2,070	1,837
Other United States, -	98	48	107	52	131	44	109	55	445	199
Ireland, - - -	1,132	1,246	981	1,121	1,058	1,244	1,201	1,391	4,372	5,002
England, - - -	115	60	143	77	129	69	150	88	537	294
Scotland, - - -	37	25	38	11	40	23	48	31	163	90
Germany, - - -	120	72	131	86	141	100	175	133	567	391
British Provinces, -	131	165	146	152	196	189	184	205	657	711
Other Foreign Countries, -	44	17	50	19	52	27	94	45	240	108
Unknown, - - -			17	22	10	21	14	11	50	120
Totals.										
American, - - -	1,236	1,212	1,180	1,198	1,220	1,182	1,262	1,224	4,898	4,816
Foreign, - - -	1,579	1,585	1,489	1,466	1,616	1,652	1,852	1,893	6,536	6,596
Unknown, - - -	48	66	17	22	10	21	14	11	98	120
Grand Total,	2,863	2,863	2,686	2,686	2,855	2,855	3,128	3,128	11,532	11,532

By the foregoing it will be observed that the marriages of American-born citizens numbered 4,898 males,



and 4,816 females, while the number of foreign-born was 6,536 males, and 6,596 females, in the four years embraced in the Table. The distinctive facts could not be obtained from the City Registrar's Report for 1850, consequently that year was omitted. The annual average of marriages was: American, 1,224½ males, and 1,208 females; foreign, 1,634 males, and 1,649 females. In analyzing the facts presented in the Table, it will be noticed that more Irish females marry other than Irish males, than Irish males marry other than Irish females. The same is also true of immigrants from the British Provinces, but the reverse is strikingly true of the natives of every other foreign country. The same fact was deduced from an analysis of the births. The constantly increasing majority of marriages among those of foreign origin over those of American birth, has brought the ratio which the number of marriages of the former bears to those of the latter, a little less than 3 to 2. The preponderance of marriages among foreign born citizens exists also in many of our neighboring cities and towns; generally speaking, this is the case in those places that we have already designated as containing a predominance of births of foreign parentage.

An interesting inquiry here arises as to the influence which the ages of parties at the time of marriage has upon their offspring. We ventured to make some allusion to this influence in one direction, in our note on page 35, but as yet we have at our command only a too limited number of facts to determine the relative influence of early or late marriages, either upon the prosperity of the parties entering these rela-

tions, or upon the health of their progeny\*; but we know that in our City and State, a very much larger proportion of females especially, marry at an early age, than is the case in European countries. Thus, in England, during the ten years, 1840-50, only about four and a half per cent. of the males, and fourteen and a half per cent. of the females marry *under 21 years of age*.† Nearly 19 per cent. of the females married in Boston during the last five years, were *under 20 years of age* at the time of entering wedlock, as shown in the following calculation, which exhibits the number and per cent. of each sex, marrying at different ages, between 1850 and 1855.

MALES.								
	Number.	239	5,957	5,039	2,464	633	255	14,587
	Per cent.	1.68	40.82	34.52	16.89	4.34	1.75	100.

AGES.								Total,
	Under 20	20 to 25	25 to 30	30 to 40	40 to 50	Over 50		

FEMALES.								
	Per cent.	18.77	49.36	21.16	8.49	1.79	.43	100.
	Number,	2,738	7,200	3,087	1,238	261	63	14,587

The proportion of early marriages throughout the Commonwealth, is greater than it is in Boston, as will be seen in the following abstract, covering a period of nearly ten years, namely, from May 1, 1844, to January 1, 1854, embracing 69,108 males, and 68,644 females, whose ages were stated at the date of marriage.

\* During the marriageable period of life, when a difference of from four to six years exists in favor of the male, the sexes may be considered cotemporary.

In warm climates, both sexes become nubile at an earlier age than in higher latitudes; and in any community, the middling and especially the less educated classes, generally enter wedlock at an earlier age than the more favored.

Early marriages are accompanied with greater prolificness, but the progeny are proportionally more puny, and subject to a greater infantile mortality.

† Registrar General's Twelfth Report.



FEMAL'S AGES.	Number, Per cent.	MALES.															
		Und'r 20	20 to 25	25 to 30	30 to 35	35 to 40	40 to 45	45 to 50	50 to 55	55 to 60	60 to 65	65 to 70	70 to 75	Over 75	Total.		
Per cent.	23.85	45.51	18.06	5.57	2.91	1.87	.95	.60	.34	.20	.09	.03	.02	100.			
Number,	16,008	31,677	115,98	3,885	2,021	1,207	659	434	232	137	65	19	12	68,644			

The above includes all parties entering wedlock in the State, whose ages were specified ; if we take only those with whom it was their *first marriage*, the proportion would be somewhat modified ; thus, of the *maids* who were married, the per centage runs, under 20, 26.14 per cent. ; 20 to 25, 49.12 per cent. ; 25 to 30, 16.81 per cent. ; 30 to 35, 4.34 per cent. ; 35 to 40, 1.77 per cent. ; over 40, 1.86 per cent.\* In Kentucky,† one-half of the ladies marry before 20 years of age, and in nearly nine-tenths of the first marriages, the female is under 25.

#### DEATHS.

In entering upon that part of our subject which has for its object the investigation of the mortality of the City, and its influence in affecting the population, a more extended and important field presents itself before us. No community can estimate the measure of its prosperity without taking largely into account, the

\* By this we perceive, that, according to the Statistics in this State, if a female is at the age of 20, and is unmarried, more than *one-quarter* of the probabilities of her ever being married are gone ; if she passes to the age of 25 a maiden, *three-quarters* of her probabilities are lost ; and if she passes to 30 years of age, unmarried, more than *nine-tenths* of her chances of ever becoming a wife are past ; at 35 years of age, and still unwedlocked, she has only about *three chances in a hundred* left, and these rapidly becoming less.

† Second Registration Report of Kentucky, page 123.

sanitary\* and mortuary condition of its people. Public health, and the causes affecting it, have received much attention both at home and abroad, of late years. As the importance of the subject becomes more known, it wakens an increasing interest in the philanthropist, political economist, and statesman. It has a large and direct influence not only upon the happiness, but also upon the wealth of the population. In short, any light in which we view the subject, it seems well deserving the attention and action of public authorities.

In relation to the point under consideration, a highly eminent individual† pertinently says :

“I do not fear the charge of exaggeration, when I claim for the sanitary question the right to be regarded THE great question of the day. Look at it as a question of humanity, and it will not suffer by comparison with the highest efforts of the philanthropist ; regard it as a great act of justice, and here, too, you will acknowledge it prefers peculiar claims to consideration ; measure it by the rule of economy, and I hesitate not to affirm that it stands without a rival ; or view it in its moral relations and reactions, and I know not whether even the great question of education will take rank before it.”

After stating the tabulated mortuary facts connected with the City, we propose alluding to such few points

\* The words *sanitary* and *sanatory*, have of late been brought into extensive use by writers on health. They have too often been used indiscriminately. Each has a specific meaning. *SANITARY* is passive, and means *pertaining to health*. *SANATORY* is active, and means *conducive to health*. See Dr. J. C. Simonds' very valuable Report on the “Sanitary condition of New Orleans,” 1851.

† Dr. Wm. A. Guy, Cantab. Fellow of the Royal College of Physicians, Prof. For. Med. in King's College, Physician to King's College Hospital, &c., &c., &c.

as our limits will permit, connected with the sanitary condition of the City, and perhaps offer some suggestions for its improvement.

To the following abstract of the deaths in Boston during the past five years, we annex the number of births in each year, thereby showing the excess of the latter over the former.

Years.	DEATHS.			BIRTHS.			EXCESS OF BIRTHS.		
	Male.	Fem.	Total.	Male.	Fem.	Total.	Male.	Fem.	Total.
1850	1,887	1,780	3,667	2,681	2,598	5,279	794	818	1,612
1851	1,966	1,889	3,855	2,788	2,550	5,338	822	661	1,483
1852	1,902	1,834	3,736	2,651	2,657	5,308	649	823	1,572
1853	2,203	2,081	4,284	2,815	2,781	5,596	612	700	1,312
1854	2,294	2,147	4,441	2,939	2,749	5,688	645	602	1,247
Totals	10,252	9,731	19,983	13,874	13,335	27,209	3,522	3,604	7,226

Here it will be seen that, with the exception of a single year, there has been a constant diminution in the excess of births over deaths from year to year, since 1850, which is quite a significant fact in a community like ours. The difference in the sexes during the five years among the births, was 539, in favor of the males, and among the deaths in the same time, it was 521, also on the side of the males, giving an increase by propagation alone, of less than one in a thousand, or one-tenth of one per cent. during the five years, in the ratio which the males bore to the population of 1850. This, it must be borne in mind, pertains to the whole number of male deaths. Should we consider in the calculation only the deaths that have



occurred to persons under five or ten years of age, we should find that a different result would obtain, for it is emphatically true, that although more males are born than females, more males also die at an early age than females, so that the preponderance of males caused by their excess in births, is more than lost before the end of the first year. This fact is equally clear, whether we consider only Boston or the whole State. The annual excess of births over deaths in the whole State, is something more than 10,000; but it is much greater in the five western counties, than it is in the nine eastern counties.

The whole mortality in Boston since 1850, to the end of 1854, (five years,) is shown to have been 19,983, or an annual average of 3,997. The mean number of the population in the same length of time, but beginning and ending five months later, was 150,108, which shows an annual average of one death to ~~40~~ <sup>38</sup> of the population, nearly; or more accurately, 2.516 per cent., which is an improvement on the average of the preceding five years. In 1847 and 1849, when the Dysentery and Cholera prevailed as epidemics, the rate of mortality was over 3 per cent., and in no year since 1845, has it fell as low as we have demonstrated it to have been for the period since 1850. But it is still much higher than the rest of the State, and very much higher than it need be, as we shall have occasion to show hereafter.

The following table, from the Report of the City Registrar, (the late A. Simonds, Esq.,) for the year 1853, will be found of interest.

997  
38  
663

TABLE VI.

*Showing the Nativity or Parentage of the persons who died in Boston in 1850, 1851, 1852, and 1853, as nearly as can be ascertained.*

	1850.		1851.		1852.		1853.	
	American Origin.	Foreign Origin.	American Origin.	Foreign Origin.	American Origin.	Foreign Origin.	American Origin.	Foreign Origin.
Boston, - - - - -	965	939	966	1,037	881	1,106	1,042	1,345
Massachusetts, except Boston, - - - - -	330	-	355	-	335	-	341	-
Maine, - - - - -	150	-	137	-	134	-	129	-
New Hampshire, - - - - -	100	-	101	-	93	-	91	-
Vermont, - - - - -	26	-	32	-	21	-	21	-
Connecticut, - - - - -	14	-	17	-	10	-	8	-
Rhode Island, - - - - -	18	-	11	-	15	-	13	-
Middle, Southern and Western States, - - - - -	77	-	82	-	53	-	57	-
England, - - - - -	-	49	-	85	-	66	-	75
Scotland, - - - - -	-	22	-	21	-	21	-	20
Ireland, - - - - -	-	803	-	834	-	803	-	942
France, - - - - -	-	9	-	7	-	7	-	7
Spain and Portugal, - - - - -	-	2	-	2	-	2	-	2
Germany and North of Europe, - - - - -	-	35	-	28	-	56	-	71
British American Provinces, - - - - -	-	84	-	95	-	86	-	73
Other Foreign Countries, - - - - -	-	18	-	13	-	21	-	14
At Sea, - - - - -	5	-	3	-	-	-	-	2
Unknown, - - - - -	21.	-	29	-	26	-	31	-
	1,706	1,961	1,733	2,122	1,568	2,168	1,733	2,551



The City Registrar's Report for 1854, does not give exactly the same distinctions, but it is sufficiently definite for us to learn that of the 4,441 deaths in that year, as nearly as could be ascertained, 1,726 were of American, and 2,706 of foreign origin, 9 being in the list of unknown. This shows a decrease of mortality among the American, and a large increase among the foreign, over that of 1853. The aggregate number of deaths classed as among citizens of American origin, during the five years, was 8,359, while the aggregate number from those of foreign origin, was 11,508, there being 116 placed as of unknown origin. This gives an annual average of 1,672 American, and 2,302 foreign, which shows the average mortality since 1850, to have been to the average population of each class, as follows: American, 2.211 per cent.; Foreign, 3.09 per cent., or in other words, in every 10,000 Americans in Boston, 221 have died annually since 1850, and of every 10,000 of foreign origin in Boston, 309 have died annually since 1850, which is very nearly in the proportion of 10 to 14, as the ratio between the actual mortality of the two classes of our citizens. Of the foreign population we can eliminate only the Irish and German, by the schedule used in taking the Census. In the record of deaths, those from the various countries in the north of Europe are, in many instances, classed with the natives of Germany.

The mortuary records as published in the City Registrar's Reports, do not designate the number of deaths among the Irish, except in the year 1854, which was then 2,461. Now, by the Census of June, 1855, that class of our citizens numbered 68,611, which gives the

rate of mortality among them as 3.59 per cent., or 359 in every 10,000 of that population. Two points must here be kept in mind; first, that this is more favorable than the real truth, from the fact that it is the rate of mortality among the Irish in 1854, to that population in 1855. Second, that the number of deaths as well as the population, embrace the children born in Boston of Irish parents. The children of foreigners were also embraced in the calculated rate of mortality among the total foreign, above. These are interesting facts, as they show the law by which the force of mortality pressed thus unequally upon different classes of our community in the middle of the nineteenth century.

It would be still more interesting and important did the data allow us to draw reliable deductions upon other points, such as would exhibit the relative force with which mortality presses upon the different sexes of the different classes, at different ages, in prescribed sections of the City. But, hitherto, facts have not been recorded with sufficient minuteness, and sufficiently extensive for this to be done with any degree of accuracy. By analyzing the various dismembered records, and comparing and localizing certain rays of light they reflect, we may, perhaps, exhibit the degrees of light and shade in a few instances. We here present from the printed Reports, the number of deaths, designating the number of each sex at different ages during the last five years.

TABLE VII.

*Exhibiting the number of deaths of each sex at different ages, in Boston, during the five years 1850-1854, inclusive.*

AGES.		1850.	1851.	1852.	1853.	1854.	TOTAL.
Under 1,	-	M. 467	499	467	580	551	2,564
	-	F. 412	436	393	484	431	2,156
1 to 2,	-	M. 239	248	240	276		
	-	F. 200	222	192	278		
2 to 3,	-	M. 106	115	109	134		
	-	F. 88	85	99	121	(1 to 5)	(1 to 5)
3 to 5,	-	M. 102	86	118	130	508	2,411
	-	F. 92	92	109	135	457	2,170
5 to 10,	-	M. 90	82	89	103	95	459
	-	F. 75	74	92	93	88	422
10 to 15,	-	M. 36	35	34	39	38	182
	-	F. 32	36	30	32	44	174
15 to 20,	-	M. 42	68	53	57	66	286
	-	F. 89	71	66	74	86	386
20 to 30,	-	M. 223	218	208	207	273	1,134
	-	F. 247	300	267	249	310	1,373
30 to 40,	-	M. 199	205	170	222	293	1,089
	-	F. 170	181	199	199	267	1,016
40 to 50,	-	M. 138	180	165	169	203	855
	-	F. 108	111	112	120	163	614
50 to 60,	-	M. 99	99	93	120	112	523
	-	F. 76	99	87	93	93	448
60 to 70,	-	M. 74	67	88	92	90	411
	-	F. 83	80	94	89	100	446
70 to 80,	-	M. 44	46	51	48	49	238
	-	F. 64	73	60	68	67	332
80 to 90,	-	M. 18	16	17	22	15	88
	-	F. 31	23	26	41	35	156
90 to 100,	-	M. 5	2	0	4	1	12
	-	F. 12	6	8	5	5	38
Over 100,	-	M. 0				0	
	-	F. 1				1	
Total,		3,667	3,855	3,736	4,284	4,441	19,983

The Report of 1854, does not specify the number of deaths between the ages of one and two years, nor

between two and three, &c., but includes all between one and five in the second designated division. We have therefore in the column for that year, as well as in the column of totals, been under the necessity of governing ourselves accordingly. The following summary will afford a more ready reference to the cardinal points under consideration. In it we have cast the percentage of those who have died of each sex at the different ages therein specified. It embraces the last five years.

Years.	UNDER 1.		UNDER 5.		UNDER 15.		15 TO 60.		OVER 60.		TOTALS.	
	Male.	Fem.	Male.	Fem.	Male.	Fem.	Male.	Fem.	Male.	Fem.	Male.	Fem.
1850	467	412	914	712	1,040	899	707	690	141	191	1,887	1,780
1851	499	436	948	835	1,065	945	770	762	131	182	1,966	1,889
1852	467	393	934	793	1,057	915	689	731	156	188	1,902	1,834
1853	580	484	1,120	1,018	1,262	1,143	775	735	166	203	2,203	2,081
1854	551	431	1,059	888	1,192	1,020	947	919	155	208	2,294	2,147
Total,	2,563	2,156	4,975	4,246	5,616	4,922	3,887	3,837	749	972	10,252	9,731
Per cent.,	12.82	10.79	24.89	21.25	28.11	24.63	19.45	19.20	3.75	4.86	51.30	48.70

By this statement it will be observed that 12.82 per cent. of males, and 10.79 per cent. of females, making no less than 23.61 per cent., or nearly *one fourth* of all the deaths are among children under one year of age. This is a striking fact, and need not exist. The causes of its existence are manifest to every one versed in sanitary science, and are removable. The truth of the above remark is as susceptible of demonstration, as it is difficult to suppose that one quarter of all the mortality of any community in a series of years, is, of necessity, to be sustained by that portion of the population who have not seen a single year of human existence.



Now if we add the 1,177 cases of still born children since 1850, to the number of deaths under one year of age, we shall find that in each year separately, and in the aggregate of the five years, between one-fifth and one-fourth (accurately 20.77 per cent.) of all who have been born in Boston during the time, have not lived so long as twelve months.

Advancing another step, to those under five years of age, we find the number of deaths since January 1, 1850, to have been 9,221, or an annual average of 1,844. Now we find the population under that age, in June 1850, to have been 17,084, and in June 1855, it was 20,212, giving a mean of 18,648, which shows that the annual average rate of mortality of those under this age was about one in ten. The increase in the population of this class during the five years, was 3,128, and the excess of deaths of this class in 1854 over those of 1850, was 321, showing so far as this one fact goes, that the rate of mortality of this class in our city has somewhat increased during the time covered by the dates of observation.

The mean population under 15 years of age as deduced from Table II., page 25, is found to be 45,168, and the annual average of deaths during the same five years, since 1850, of the same class of the population, was 2,108, showing that this class sustained a mortality of one death in  $21\frac{1}{2}$  of the population annually, or 4.67 per cent., that is, only 533 in every 1,000 reach the age of fifteen years.\* The mean population over fifteen years of age was 104,940, and the annual average

\* In England, 674 of the males, and 700 of the females in 1,000, of the respective sexes, reach the age of fifteen years.—Samuel Brown, F. S. S., &c.



number of deaths of these over the same age, was 1,845, giving only one death in a trifle less than 57, of this class of the population, or 1.76 per cent. as their annual rate of mortality.

In the above deductions from reliable data will be found many points suggesting serious reflection to thinking minds, without extended comments from us here. The innocent young among us, who have not the ability to appeal in their own behalf, suffer an unduly severe proportion of the weight of disease and death. It will also be observed that the life of males is far more precarious in early life, than that of females. This disparity is greatest at the beginning of life, and gradually diminishes up to the age of fifteen.

At the period of life between the ages of fifteen and thirty, the ratio of the mortality of the sexes changes, and more females than males die; and this greater liability to death among females, continues up to the age of forty, when it is again reversed, giving a preponderance of male deaths between the ages of forty and sixty. After this last named period of life, the female deaths predominate at an increasing rate, even to the extreme ages. It must be borne in mind, that this is merely the comparative mortality of the sexes. In order to determine accurately the relative liability to death of the sexes at different periods of life, we must obtain the ratio which the deaths of each sex, at different ages, bore to the living of each sex at the same ages. We have not the data to do this, but we learn by the United States Census of 1850, that the number of each sex then living at different ages, was as follows, in Suffolk County and in the whole State. We also

annex from the compendium of the United States Census, issued from the Census office last year, the proportions of the sexes in the State at the time the Census was taken in 1850.

AGES.	SUFFOLK COUNTY.		MASSACHUSETTS.		No. of Females to every 100 males in the State.	AGES.	SUFFOLK COUNTY.		MASSACHUSETTS.		No. of Females to every 100 Males in the State.
	Male.	Fem.	Male.	Fem.			Male.	Fem.	Male.	Fem.	
Under 1,	1,904	2,057	11,527	11,466	98.2	50 to 60	2,968	3,587	28,340	31,293	110.4
1 to 5,	6,603	6,641	45,460	44,544		60 to 70	1,318	1,833	16,743	19,807	118.3
5 to 10,	7,086	7,193	51,143	50,697	99.1	70 to 80	429	685	7,784	10,003	128.5
10 to 15,	6,246	6,475	49,129	48,034	97.7	80 to 90	95	180	2,335	3,420	146.4
15 to 20,	6,323	7,622	43,868	56,044	114.6	90 to 100	5	21	197	393	199.4
20 to 30,	16,074	18,866	101,306	107,856	106.4	Over 100	1	1	4	9	225.0
30 to 40,	12,260	12,041	72,540	70,002	96.5	Unknown,	544	65	1,016	177	17.4
40 to 50,	6,766	6,590	47,696	47,612	99.8	Total,	68,622	73,857	484,093	501,357	96.5

In the foregoing statement, the first column (Suffolk County) includes 134,882, in the City of Boston; 6,664 in Chelsea, and 933 in North Chelsea, making a total of 142,479, *white population*, to which alone the whole abstract has reference. It will be perceived that the proportion between the males and females in Suffolk County alone, differs from that in the whole State, especially in the earlier ages. Of those under fifteen years of age, for instance, the males predominate in the State, whereas the females predominate in Suffolk County.

In relation to some of the points which we have recently held in review, Dr. N. B. Shurtleff submits the following observations pertaining to the mortality of the whole Commonwealth, in his Registration Report for the year 1854.

“It is a well established fact, that the greatest number of deaths occur in early infancy. There died in

the year 1854, 4,188 children under one year of age; of whom 2,321 were males, 1,786 were females, and 81 were reported as of unknown sex. The number of those who died before attaining the age of five years, amounted to 8,079,—4,337 males, 3,637 females, and 105 of unascertained sex,—being 38.15 per cent. of all the deaths that occurred during the year 1854, whose ages were reported. Between the ages of 20 and 30, the next most fatal period of life, there died 1,109 males, and 1,493 females, making a total of 2,602 individuals. The following table, prepared from the abstracts in the Reports of the present and last two years, exhibits similar results for the three years:—

Year.	SEX.	Total.	Under 1.	Under 5.	20 and under 30.	All oth'rs.
1852.	Males, - - -	8,978	2,026	3,719	808	4,451
	Females, - - -	9,396	1,641	3,101	1,285	5,010
	Unknown, - - -	108	83	94	—	14
	Totals, - - -	18,482	3,750	6,914	2,093	9,475
1853.	Males, - - -	9,942	2,248	4,192	976	4,774
	Females, - - -	10,210	1,807	3,595	1,307	5,308
	Unknown, - - -	149	120	125	—	24
	Totals, - - -	20,301	4,175	7,912	2,283	10,106
1854.	Males, - - -	10,710	2,321	4,337	1,109	5,264
	Females, - - -	10,558	1,786	3,637	1,493	5,428
	Unknown, - - -	146	81	105	—	41
	Totals, - - -	21,414	4,188	8,079	2,602	10,733
Aggregate.	Males, - - -	29,630	6,595	12,248	2,893	14,489
	Females, - - -	30,164	5,234	10,333	4,085	15,746
	Unknown, - - -	403	284	324	—	79
	Totals, - - -	60,197	12,113	22,905	6,978	30,314



The above table shows, that during the three years—1852, 1853, and 1854—60,197 individuals died within the Commonwealth; 12,113, or 20.12 per cent. of whom were under one year of age, 22,905, or 38.05 per cent., were under five years of age, 6,978, or 11.59 per cent., were over twenty, and under thirty years of age. About one-half of all who died during these years, deceased either in infancy, under the age of five years, or having passed the period of youth and entered into adult age, died between the ages of twenty and thirty years. The same table shows, as does also other tables, that a majority of the children who die early are males, and that of those who die after having arrived to maturity, the females are most numerous.

The above facts are exhibited in a stronger view, when the results of the registration of previous years are added to those which are deduced from the tables of this year's Report."

The same general principles obtain, in relation to these points in other places, with the exception of the fact that in *cities* there are more males than females in the total of deaths. We will, however only add a short statement compiled from the last Report of the Inspector (Registrar) of New York City.

Years.	DEATHS IN NEW YORK CITY 1850-1854, INCLUSIVE.							DEATHS IN BOSTON DURING THE SAME YEARS.		
	Total.	Under 20.	Over 20.	Excess under 20.	Excess Males und'r 20.	Excess Males over 20.	Tot'l excess of Males.	Males.	Fem.	Total.
1850	16,978	10,567	6,411	4,156	1,021	317	1,338	1,887	1,780	3,667
1851	22,024	14,349	7,675	6,674	1,995	331	2,326	1,966	1,889	3,855
1852	21,601	12,946	8,655	4,291	1,632	485	2,117	1,902	1,834	3,736
1853	22,702	14,578	8,124	6,454	936	822	1,758	2,203	2,081	4,284
1854	28,568	17,886	10,682	7,204	1,152	810	1,962	2,294	2,147	4,441
Total.	115,873	70,226	41,647	28,770	6,736	2,765	9,501	10,252	9,731	19,983

In connection with these abstracts, we will quote the following pertinent remarks of Dr. Downing, the City Inspector.

“Statisticians seldom fail to notice the correspondence existing in the sums of any regular series of events. In seeking to discover rules, any thing that has a constant relation, has its import ; every ratio may, upon investigation, lead to some desired explanation, hence the benefit to be derived from instituting comparisons.

The greater exposure of male *adults* is usually assigned as a reason for their excess ; but that of male *children* has not yet received a solution that is deemed fully satisfactory.”

When commenting on the disparity in the ratio of mortality of the different classes of our population, (page 46,) allusion was made to the desirableness of elucidating other points, did the data allow their elimination. We have found the material for pursuing inquiry on a single point. The City Registrar's Report for 1855, is not yet completed, of course, as the year has not terminated ; but through the kindness of that officer, we have been enabled to examine and collate the records of deaths during the twelvemonth, beginning Nov. 1, 1854, and ending October 31, 1855. This embraces a period of just one year, at the middle point of which the Census was taken. The deaths were 3,952, which is a very fair average in the mortality of Boston. In the absence of any abstract in the printed Reports or elsewhere, showing the number of deaths in the several wards of the City, we had special reference to particular points, and although our conclusions would more nearly approximate the truth of a



general law, did they cover a longer period of time, yet they are accurate for the single year, which, as we have stated, is a fair representative year in the health of our City.

Of the 3,952 deaths during this period of time, no less than 1,036, or 26.21 per cent. were of infants, under one year of age. During the months of July, August and September, 1855, there were 1,262 deaths, being nearly one-third of all that occurred during the twelve months; of these 417, or a little over 33 per cent., were not one year old, and 751, which is 59.51 per cent., were of children under five years.

But our chief design was to exhibit the contrast in the comparative mortality in different prescribed sections of the City, as we had been able to do in reference to special classes of citizens. The records were not sufficiently minute in detail to point out this fact in relation to certain special districts, well-known and long noted for their extreme salubrity, or fatality, the latter rendered so by the most obvious causes, which are removable. We were compelled to adopt those artificial divisions of the City, which had been made for other considerations, and are termed wards.

Comparing the number of deaths in the several wards, with their population, a striking contrast becomes patent in the proportional rate of mortality; some wards suffering nearly twice as much as others.

For the sake of comparison, let us consider *wards six* and *seven*, which occupy opposite sides of the City in a middle section between its northern and southern extremes.

Ward *six* lies on the western side of the City, and

embraces that elevated portion between Cambridge, Temple, Mount Vernon and Beacon streets, with Charles River for the remainder of its boundary. This section is well located by nature for drainage and comparatively pure air, having the Common contiguous on the south, and the water on the west. It includes the site of the State House, and covers the western slope of the hill on which the capitol is so conspicuous. This region is inhabited by many of our most opulent, as well as many of our more indigent citizens. More than one half of all the colored population of our City dwell in ward six. The population of this ward is shown by the Census to be 8,890 native, and 2,617 foreign, making a total of 11,597; and the deaths during the twelvemonth were 167, being a little less than *one in seventy* (69.4) of the population. This is 1.44 per cent., and proved to be the most healthy ward in the City during the period of observation.

Ward *seven* lies on the easterly side of the middle portion of the City, and is bounded by a line running from Central Wharf, up Milk street to Washington, thence to Winter, through that to Tremont, thence to West, and down through West and Bedford streets, in nearly a straight direction to the water of the harbor at the foot of Summer street, having the shore for the remainder of its boundary. This embraces Fort Hill, the whole of Broad street, Federal street, &c., localities well known for their insalubrity. It also contains some first class residences in the vicinity of Summer, Bedford and Washington streets, and between Winter and West streets. But a large portion of its territory is densely peopled, badly drained, low and filthy. Its

population consists of 4,043 American, and 14,387 foreign citizens, making a total of 18,430, only 22 of whom are colored. The deaths during the twelve-month were 505, which is *one in thirty-six and a half*, or 2.74 per cent. of its population, being in comparison with the mortality of ward six, as 23 to 12. Thus, as will be seen at a glance, ward *seven* exhibits nearly twice the mortality that ward six does. Had the proportion of deaths to the living, been as low in ward *seven* as it was in ward *six*, there would have been only 265 deaths during the twelvemonth, which would have been a saving of no less than 240 lives in that single ward during one brief year. This would have been no less than 1200 lives saved at the same rate during the past five years. Who can say that this might not have been done by proper sanitary regulations, which are specifically under the power of the City government. Are not the protection and preservation of life as much the subjects of municipal regard as the protection of property? It is made so in other countries at least. In England for instance, the constituted authorities by law prevent the habitation of such places as may be found in ward *seven*, huddled by large numbers of its population.

In ward *six* there are 1463 dwellings, and 11,597 persons to occupy them; in ward *seven* there are only 1009 inhabited houses, and no less than 18,430 human beings to stay in them. In ward *six* there are 14 houses having over five families in each, and in ward *seven* there are 274 houses, each having more than five families in them. The average number of persons to a family is the same in both of these wards, but the



average number of families to a house in ward *six* is only 1.47, while in ward *seven* it is 3.41.

But it is unnecessary to pursue this contrast further. Ward eight is in almost every particular in like condition with ward seven. It joins the latter on the south, and sustains even a still higher rate of mortality. But without further comment, we here subjoin a tabulated statement of the population in the several wards, together with the mortality during the twelvemonth above considered, which commenced six months before, and ended six months after taking the census, also some other facts tending to show the density of the population in the several wards of the City.

WARDS.	1	2	3	4	5	6	7	8	9	10	11	12	Total.
Population,	19,264	15,963	13,175	7,912	10,428	11,597	18,430	12,690	9541	12553	13164	16612	161429
Deaths,	519	394	291	142	194	167	505	351	172	230	303	415	3,952
1 death in	32.6	40.5	45.3	55.7	53.8	69.4	36.5	35.9	55.5	54.6	43.4	40.	40.84
Per cent. to populat'n,	3.07	2.53	2.21	1.80	1.86	1.44	2.74	2.77	1.80	1.83	2.30	2.50	2.45
HOUSES.													
Inhab. by 1 Fam.,	1,030	785	581	463	808	1,045	470	692	639	656	1,052	1,203	9,474
Inhab. by 2 Fam.,	264	616	223	60	306	257	95	153	308	278	365	582	3,507
Inhab. by 3 Fam.,	166	150	127	29	84	93	63	75	76	102	112	107	1,134
Inhab. by 4 Fam.,	113	50	80	14	34	42	55	52	26	58	61	48	633
Inhab. by 5 Fam.,	76	18	53	7	14	12	52	37	12	33	17	21	352
Over 5 and under 10,	99	17	54	22	10	13	241	79	23	57	22	15	651
10 and un- der 15,	16	1	2	4		1	30	6	2	3	1	2	63
Over 15,	1	1	1				3	2	1	1			10
Whole No. of Inhabited Houses,	1,765	1,638	1,121	599	1,256	1,463	1,009	1,096	1137	1,138	1,630	1,978	15,880
Whole No. of Families,	3,744	2,913	2,393	952	1,941	2,160	3,441	2,290	1387	2,374	2,603	3,107	29,810
Av. No. of Fam. to 1 house,	2.12	1.77	2.13	1.58	1.54	1.47	3.41	2.03	1.65	1.99	1.60	1.57	1.87
Av. No. per- sons to 1 house,	10.91	9.74	11.73	13.20	8.30	8.92	18.26	11.57	3.39	10.56	8.19	3.39	10.16
Av. No. per- sons to 1 Family,	5.14	5.48	5.50	8.31	5.37	5.37	5.35	5.54	5.05	5.29	5.08	5.34	5.41



Another important point connected with the mortality of our City, but not peculiar to it, is comprised in the fact that a much larger number of deaths occur during the summer and early autumnal months, than at other seasons of the year. This is a truism which applies to all parts of our Commonwealth. In the cities, however, August shows the highest rate of mortality, while in country communities, September generally proves to be the most fatal month. The various months do not furnish so great a disparity in the number of deaths in Boston, as would be the case were it not the custom of large numbers of our citizens to leave the City during the hot season of the year. Many entire families spend the summer in some country retreat, while the number of those having no family who go to the country at this season, embraces many thousands.

The per cent. of mortality in summer would be much increased, could we compare the number of deaths with the actual residents at that time. But as it is, we find, without exception, that more deaths have occurred in August, each and every year for a long period, than in any other month.

The following abstract will show at one view, the number of deaths in each month of each of the last five years, in the City ; also the proportion of the aggregate mortality which was sustained by each month :

MONTHS.	DEATHS.					Total.	Perc'nt.
	1850.	1851.	1852.	1853.	1854.		
January, - -	313	302	280	357	410	1,662	8.31
February, - -	294	306	263	317	350	1,530	7.66
March, - - -	350	326	293	339	373	1,681	8.41
April, - - -	296	294	272	339	412	1,613	8.07
May, - - -	301	331	242	330	320	1,524	7.63
June, - - -	279	290	244	263	349	1,425	7.13
July, - - -	271	320	365	383	496	1,835	9.18
August, - - -	396	409	433	503	548	2,239	11.45
September, -	328	376	372	436	393	1,905	9.53
October, - -	261	290	306	316	273	1,446	7.24
November, - -	269	289	330	333	264	1,485	7.43
December, - -	309	322	336	368	253	1,588	7.94
Total,	3,667	3,855	3,736	4,284	4,441	19,983	100.

By the foregoing it will be noticed that nearly eleven and a half per cent. of all the deaths in Boston during the last five years, took place in the month of August. As before stated, this proportion appears less than it really is, in consequence of the absence of some thousands of our citizens from the city at that time. Yet it is sufficient to show that the period since 1850, has been one of comparative health.

It is a well established fact, that the light or heavy mortality of the summer season, as compared with the rest of the year, is one of the criteria by which the degree of health in any place, or for any period of time, may be determined. The various epidemics and infantile diseases usually prevail at this season, and they are noted for their influence in giving character to the measure of mortality. So important is this fact that we have taken considerable labor to present some of

the more prominent epidemics and infantile diseases that have proved fatal in the City and in the State during the past five years, and annexed Consumption and Pneumonia—the two principal diseases of the lungs. First, will be found those of the City, afterwards those of the whole State arranged in two Tables — one giving the numbers, and the other the percentage, of those who have deceased, of these several diseases during the various months of the year ; also the numbers and percentage at several specified ages, &c. They are exceedingly important tables and will exhibit at a glance many notable points of great interest, to which we shall have occasion to refer hereafter.

## TABLE VIII.

*Exhibiting the number of deaths that have occurred in Boston from some of the most fatal diseases, during each month of the last five years, 1850–1854, inclusive.*

CAUSES OF DEATH.	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	TOTAL.
Dysentery, -	19	12	19	6	11	11	76	196	177	79	37	16	659
Typhus Fever, -	62	35	34	51	40	46	31	50	53	60	71	70	603
Measles, -	73	72	58	41	46	27	26	38	18	16	39	75	529
Erysipelas, -	25	14	25	21	25	20	10	10	5	6	15	10	186
Scarlatina, -	93	69	59	44	51	68	48	52	19	32	65	82	682
Croup, -	83	58	53	55	45	27	33	21	28	45	65	89	612
Cholera Infantum, -	1	—	2	—	1	2	78	167	115	24	7	—	397
Infantile, -	142	117	113	111	102	88	133	189	137	99	119	112	1,462
Teething, -	37	45	63	46	34	29	79	142	123	59	43	38	738
Consumption, -	279	281	290	321	317	250	289	237	266	297	298	296	3,421
Pneumonia, -	152	136	160	115	95	70	47	30	38	62	76	133	1,108



## TABLE IX.

*Showing the NUMBER of deaths that have occurred in Massachusetts from several specified causes, during the several months of the year, and at different periods of life, during the last five years, 1850—1854 inclusive.*

MONTHS.	Dysentery.	Typhus Fever.	Measles.	Scarlatina.	Erysipelas.	Croup.	Cholera Infantum.	Teething.	Consumption.	Pneumonia.
January, -	58	243	121	371	78	261	10	62	1658	513
February, -	71	176	121	347	79	231	9	85	1585	574
March, - -	70	195	147	357	100	237	18	105	1830	666
April, - -	56	201	120	332	83	178	14	89	1766	549
May, - -	62	181	110	299	76	143	14	72	1817	374
June, - -	122	166	67	249	80	117	38	64	1595	229
July, - -	633	216	76	198	48	95	323	160	1694	155
August, - -	1899	368	107	179	53	85	765	340	1795	122
September, -	2031	479	72	147	55	126	653	330	1848	139
October, - -	829	600	42	179	43	226	186	143	1816	218
November, -	167	448	70	226	67	274	29	90	1662	282
December, -	72	324	118	281	54	325	11	86	1769	472
Unknown, -	15	5	—	2	2	3	4	—	33	5
Total,	6085	3602	1171	3168	818	2301	2074	1626	20,868	4298
Males, - -	3067	1957	595	1555	418	1243	1065	831	8482	2289
Females, -	2944	1644	571	1601	398	1043	990	793	12,365	1999
Unknown, -	74	1	5	12	2	15	19	2	21	10
AGES.										
Under 5, -	3914	250	987	2256	224	1925	2057	1624	1732	2241
5 to 10, -	371	211	95	697	16	337	11	2	259	196
10 to 15, -	107	238	18	89	22	18	2	—	442	62
15 to 20, -	103	545	23	35	57	3	—	—	1858	86
20 to 30, -	263	941	15	32	91	2	—	—	5486	249
30 to 40, -	264	471	16	26	78	2	—	—	3699	237
40 to 50, -	233	322	4	13	68	—	—	—	2383	222
50 to 60, -	208	264	3	3	87	2	—	—	1838	229
60 to 70, -	219	168	4	2	81	2	—	—	1627	277
70 to 80, -	219	132	—	2	55	2	—	—	1117	302
Over 80, -	139	43	3	1	35	—	—	—	264	168
Unknown, -	45	17	3	12	4	8	4	—	163	29
Totals,	6085	3602	1171	3168	818	2301	2074	1626	20,868	4298



TABLE X.

*Showing the PERCENTAGE of deaths that have occurred in Massachusetts from several specified causes, during the several months of the year, and at different periods of life, during the last five years, 1850-1854, inclusive.*

[illegible]

The most substantial indication of true and permanent prosperity of any people, is that which exhibits a high degree of public health. Of any communities that enjoys the most real happiness, and is best fitted to fill all the great purposes of human existence, which possesses, individually and in the aggregate, the best physical condition. Public Health is to the masses, what personal health is to the individual. But it is not our intention here to give an exegesis on health. Its propositions and importance are sufficiently obvious to thinking minds. It is equally true that the subject of public health is under control, in a very great measure, by sanitary regulations, instituted by those who have the governing power. The matter, however, has been greatly overlooked for many years past, especially in young and vigorous communities like those of our country. Some of our larger cities, not excepting our own, have suffered, and are suffering vastly more than we are aware of, the sad consequences of sanitary neglect. We have so long been accustomed to give this point of municipal regard, but little care and attention, that a general apathy prevails and passes from one civic administration to its successor almost without a thought. The consequences of this neglect are becoming so apparent in many of our American cities that it has arrested the attention of the philanthropic among us, and facts of a deeply deadly shade are rising in a rugged column as a monument to past indifference, and a warning lesson for present and future action. The sombre inscription will be read in years to come, with ineffective grief.

Many among us have been accustomed to look far

away to the crowded pest-germs of London, Leeds, and Liverpool, and the squalid occupiers of contracted, filthy underground apartments of these and other continental cities, for the prevalence of moral and physical degradation, for accumulated disease, and premature death; while in like manner and with similar emotions, the enlightened few, in the secondary cities of our own country are raising a warning voice lest these lesser communities should become as bad as Boston and New York. We seem content to breathe a thank-offering that we are not as other places, while our more favored neighbors are lending us their by no means misplaced commiseration. But transatlantic cities are atoning for the past by present exertion; while we seem dreaming, they are acting. The constituted authorities, supported and urgently prompted by the general government, have already emptied the cellars of many of the larger towns in England, of tens of thousands of their occupants, and by law pronounced these underground rooms untenable. Municipal regulations prescribe what places shall not be used as habitations for human beings, and define the least amount of space that shall be appropriated to each person, in the various lodging houses. An efficient health officer has the sanction of Parliament\* for visiting the abodes of the lower classes, and where it is deemed essential to health to order a cleansing and whitewashing, which, if it is not done in a given specified time, is done under his own supervision, by men

\* See "Nuisances Removal and Diseases Prevention Act," 12 & 13 Vict. Chap. 111, Sect. 3. Also Police Acts of Manchester, (Sect. 86,) Birmingham, Liverpool, &c.



whom he employs for the purpose, and the occupier or *owner* of the premises is held liable for the expense.

In our own country, very little has as yet been done by civic lawmakers for the relief of communities from an unnecessarily high rate of mortality. More doubtless will be done by constituted authorities in American cities, when public attention is more strongly and more thoroughly called to the alarming facts that have, and are taking place in all of our densely peopled communities. City governments will act upon the consideration that it is as much a duty to legislate for the protection of life as for the protection of property.

Says the late sagacious Dr. Rush, of Philadelphia, "to all natural evil the author of Nature has kindly prepared an antidote. Pestilential fevers furnish no exception to this remark. The means of preventing them are as much under the power of human reason and industry, as the means of preventing the evils of lightning and common fire. I am so satisfied of the truth of this opinion, that I look for the time when our courts of law shall punish cities and villages for permitting any of the sources of malignant fevers to exist within their jurisdiction." We fully subscribe to these sentiments, and consider the time rapidly approaching.

This remark was made by a distinguished American philanthropist, but the British Board of Health with the Earle of Carlisle (Lord Morpeth,) at its head, most laudably assume for the English Parliament, the honor of first recognizing the principle. They say, "Parliament has legislated on the conclusion, submitted with an accumulation of demonstrable evidence, that the causes of epidemic, endemic and contagious diseases



are removable, and that the neglect on the part of the constituted authorities to remove such causes, as far as they are obviously within their control, is a punishable offence. The foundation which the legislature has thus laid for the physical, and consequently the moral improvement of the people is recognized. Half a century ago it was said by a great physician and philanthropist, that the time would come when the legislature would punish communities for neglecting the known means of preserving the public health, and that prediction the British Parliament has been the first to realize."

The relative degree of public health, and the comparative freedom from undue mortality, in any community, at any period of time, may be known in two ways. The conclusion from these separate processes of reasoning on the subject will be the same, although one will give much more accuracy than the other. The first is where we have given;—the location, space allotted to each individual, condition as to cleanliness, dampness, drainage, purity of the water, and purity of the air, &c. ; in short, the extent to which the general and well established laws governing health and life, are observed or violated. The second method is where we have given;—the various correctly recorded facts pertaining to the mortality for a sufficient period of time. By the latter method, the degree of salubrity or fatality, can be determined with mathematical precision, and exhibit to the living the exact expectation of life.

But without knowing all the facts connected with registration, a close approximation to the truth can be estimated by knowing, *first*, the proportion which deaths from epidemics bore to the whole mortality; and,

*second*, the proportion of infantile mortality, for these two points are found to move very accurately in the same direction as the aggregate of deaths. This relation is so constant that these two items, as before hinted, may safely be considered as reliable criteria in estimating the comparative health of different places or different times.

If we now refer to tables VIII., IX. and X., on pages 61, 62 and 63, we shall notice that a very large proportion of the deaths, both in Boston and in the whole State, were from epidemic diseases, and those which are peculiar to persons of the early ages; and further, that, the excessive summer and autumnal mortality is produced by the excessive fatality of these diseases at that period of the year. It is also a demonstrable truth that these are the very diseases which are produced by causes that are removable, hence they are, to a great extent, under the control of government.

We have shown in the tabulated statement on page 58, that the weight of mortality in Boston, fell chiefly on certain much neglected portions of the City, particularly in wards seven and eight. Had the whole City been as healthy as ward six (and this ward contains more than half of the colored population of the City, whose mortality, on the authority of the City Registrar, is greater than that of the whole City,) nearly 2,000 lives would have been saved in the single year of 1855. This, it will be remembered, was in a comparatively healthy year, when no unusual epidemic prevailed. We forbear to announce what would have been the case in a year like that of 1847 or 1849, when epidemics swelled the mortality to 3.10 and 3.79, instead of 2.45

per cent. No one will be surprised at these facts, who will take the trouble to visit the abodes, many of them cellars, and nearly all crowded with a dying mass of human beings, which occupy the low land, much of it redeemed from the water, that lies in the northerly, easterly and southerly sections, and suburbs of Boston. They are equal to any thing we have ever been able to discover in European cities. Probably not one in a thousand of our more favored citizens have any correct idea of the low, dark, damp habitations grouped in badly drained and almost unscavenged neighborhoods where thousands, and we think we might safely say tens of thousands of our population dwell, amidst all the impurities of a polluted atmosphere, and personal uncleanness. These are the hotbeds of typhus, dysentery and other epidemics, as well as diseases peculiar to children. The various exhalations of the human body, particularly when regardless of cleanliness, in an over crowded apartment, is ranked among the most deadly poisons known. It acts insidiously but with fatal certainty. This condition, especially when connected with a scanty supply of nourishing food, begets struma which ripens the system for an attack of any of the more severe epidemics in the adult, and cholera infantum, marasmus and convulsions in children.

The christian heart becomes faint at the thought made forcible by the actual knowledge that vast numbers of our fellow citizens, every way capable of becoming useful and respectable members of society, are doomed to exist, until a speedy or lingering death terminates their brief career, in places where the middling and better classes would not put their eatables.



These unfortunates moreover pay, relatively, a vastly higher rent in most cases, than those who enjoy far better accommodations. What adds more poignancy to the whole is, that this repulsive condition of things might, legitimately, be prevented by sanatory enactments. I know it may be, and is often said, that "we are no worse than New York and other cities," but this does not exculpate us nor remove easily preventable causes of disease and death in our own midst. We venture the assertion, without the slightest fear of successful contradiction, that if the City of Boston should have the care to adopt one half the precautionary measures for improving and preserving the public health of its citizens, that is carried into effect in almost every city of England, a future census, giving a correct statistical condition of our population, would show a greater degree of actual prosperity than can be brought about by any other change in our municipal policy.

A low physical condition begets, and is almost inseparably connected with, a low moral condition. Several years since, when the Sanitary Reform was in its infancy in England, a divine, writing upon this topic, invites us to "some close tenement, some narrow lodging, perhaps a single chamber for a whole family, dark, dirty, noisome, pestilential; the occupiers in rags, and faint for want of food," and he there asks us, "whether the beauties of the Christian character are likely to flourish in such an atmosphere as this?" "Whether modesty can bloom where common decency is impracticable?"\*

\* The Cause and Cure of Abject Poverty, by Rev. C. Girdlestone, M. A., Rector of Kingswinford, Staffordshire. See also, "Letters on the Unhealthy Condition of the Lower Class of Dwellings, especially in Large Towns," by the same author.



But this furnishes a rich theme for the theologian, to whom we would earnestly commend the text.

It is within our province, however, to refer to the fact that a low sanitary condition begets immorality and crime, as well as poverty. One of the most certain and frequent results of the moral indifference and physical torpidity produced by the domiciliary condition of vast numbers of our population, (the disgusting details of which we have too often seen, but have declined to narrate,) is that which seeks relief in stimulants. One potion of the adulterated poison used by the lower classes, creates an appetite for more. What of moral principle human nature affords, that has not been stupefied by other means, is deadened, and too often, apparently obliterated; and thus is opened the cause of a long catalogue of crimes which, in various ways become very expensive to the City. Our police stations and courts become crowded, our eleemosynary and correctional institutions\* become largely populated, and our tax-bills become augmented. But these points do not present the only, nor the greater items of treasure lost by sanitary neglect, as we shall have occasion to show in a future paragraph.

While on the topic of *expense* arising from removable causes of sickness and epidemic death, let us take another view of the matter. On a preceding page, we have held in comparison the sanitary and mortuary condition of two sections, centrally located, in the latitudinal direction of the City. These comprised wards six and

\* During the past five years, the net expenses of the "House of Industry," on Deer Island, was over \$320,000, and those of the "House of Correction" over \$110,000.

seven, in which we found a great contrast. It was also observed that ward eight lying contiguous to ward seven on the south exhibited a higher rate of mortality than even ward seven. But the most fatal section of our City lies in the extreme northern part, in ward one. This embraces Commercial, a part of Ann (now North Street,) Fleet, Moon, the lower part of Hanover, Snow-hill, Sheafe and other noted Streets, and exhibits a mortality in 1855, as shown in the figures on page 58, of 307 in every 10,000 inhabitants, or 3.07 per cent. Had the residents of this district or ward enjoyed the same immunity from disease and death which even ward six did, no less than 294 lives would have been saved in ward one during the brief period of twelve-months, and had it suffered no more than the City in the aggregate the deaths would have been 119 less within those limits during the same time.

Five of the wards of the City, (viz.—wards 4, 5, 6, 9 and 10,) sustained a mortality of considerably less than *two per cent.* We therefore feel fully justified in assuming *two per cent.* or one death to fifty of the population as a safe estimate to which the rate in our City might *easily* be reduced. This leaves a large margin, and is the highest rate that is considered proper to be permitted to exist by our transatlantic neighbors, in any of their crowded towns or cities. Now, if all over two per cent. of the mortality in Boston is preventable and unnecessary, and no one who will examine the subject will for a moment question the fact; then there have occurred *annually* during the five years since 1850—a more healthy period than the preceding five years—no less than 994 unnecessary deaths, making a total of

4,970. Attending these, there are items of expense which it is difficult to estimate, such as arise from the production of widowhood and orphanage, premature funerals, &c., besides the loss of what the deceased might have earned. But this is not all. An extensive array of facts, from observations made in different localities, and at different times, demonstrate the truth that for every case of unnecessary death, there are, at least, twenty cases of preventable sickness. This is the lowest estimate given by investigators and authoritative writers on this subject. This would give the startling number—startling to those who have not thought of the matter—of 20,000 cases of sickness annually, in our City which might have been avoided. Add the items of expense from this source, to that from preventable deaths, and at the rate which Lord Morpeth,—sustained by an enormous weight of facts—sanctioned in a most elaborate speech in the British Parliament, the *annual* loss to Boston, arising from disease and death that might be prevented, amounts to \$100,000. This sum, large as it appears, allows but \$100 for the combined expenses of a single death and twenty cases of sickness, and most undoubtedly falls below the truth. It is moreover extraneous from that which we have alluded to as flowing through the channels of crime, intemperance, and other immoralities. Truly might we adopt the language of an able foreign writer in reviewing the subject of sanitary reform, who says, “halve or quarter every item, if they appear exaggerated, and there will still remain the most remarkable *exposé* ever yet made of municipal extravagance. One broad principle,” he adds, “may be safely enunciated in respect



to sanitary economics;—that it costs more money to permit disease than to prevent it.”<sup>u</sup>

Such are some of the more prominent results of preventable epidemics. We have already stated that it is the settled opinion of all eminent sanitarians, both in this country and abroad, that epidemics are under human control, and need not exist to any noticeable extent. There is a large abundance of information to prove this beyond a doubt. It is not our intention here to go into extensive details to illustrate this point. We cannot well refrain from enforcing it, however, by one or two examples, which serve to throw great light on the subject. One of the most remarkable instances occurred in Baltimore during the general prevalence of the cholera in our cities, in 1849.

The population of this city was about 149,000. The site of the town is naturally salubrious, and parts of it are well built; but the districts near the river occupied by the poorer classes are low and damp, and liable to remittent and intermittent fevers, and, therefore, predisposed to cholera.

In the spring of 1849, the pestilence, which had attacked with great violence several neighboring places, appeared to be close upon the city. A general conviction prevailed, both among the authorities and the citizens, that uncleanness had much to do with the development and spread of the disease; they therefore spared neither money nor labor to purify the city, and they gave the execution of the cleansing operations to experienced and energetic officers, who performed the work so vigorously, that it was generally admitted that

<sup>u</sup> British and Foreign Medico-Chirurgical Review.



never before had the town been in so clean a state, or so thoroughly purified, as during the summer months of the year 1849.

About the middle of June, while cholera was prevailing at New York, Cincinnati, and other places, north and west of Baltimore, diarrhoea broke out, and became general over the whole city, accompanied by another symptom which was universal, affecting even those who had no positive attack of diarrhoea; namely, an indefinite sense of oppression over the whole region of the abdomen, seldom amounting to pain, but constantly calling attention to that part of the body.

“At that time,” says the medical officer of the city, “I felt assured that the poison which produced cholera pervaded the city; that it was brooding over us; that we were already under its influence, and I anticipated momentarily an outbreak of the epidemic. In about two weeks, however, from the commencement of this diarrhoea, and the prevalence of the uneasy sensation which accompanied it, these symptoms began to subside, and in a short time they wholly disappeared. Simultaneously with their disappearance, cholera broke out at Richmond, and other towns south of Baltimore. I then felt assured that the fuel necessary to co-operate with this poison did not exist in our city: that the cloud had past over us and left us unharmed.”

No case of cholera was reported to the Board of Health or other authorities of the town as having occurred during this time; but on close examination, it was ascertained that four deaths had taken place from the disease in its most virulent form.

That the cholera poison had really pervaded the city,

was appallingly evinced by an event which occurred in its immediate vicinity.

The Baltimore almshouse is situated about two miles from the city, on sloping ground, remarkable for its beauty and salubrity, in immediate contiguity with the country-seats of several of the wealthy families of the town. It is surrounded by a farm of upwards of 200 acres, belonging to the establishment, for the most part under cultivation. The building is capable of accommodating between 600 and 700 inmates. An enclosure of about five acres, surrounded by a wall, adjoins the main building upon its north side. In the rear of this north wall is a ravine, which at one point approaches the wall to within about nine feet. This ravine is the outlet for all the filth of the establishment. It is dry in summer, but retentive of wet after rain. The space between the wall and the bed of the ravine is not under tillage, but is overgrown with a rank, weedy vegetation, common in rich waste soils. The physician of the establishment, under the same apprehension of an outbreak of cholera as had prevailed in Baltimore, had taken the same precautions against the disease, and had placed the establishment itself in a state of scrupulous cleanliness.

On the first of July cholera attacked one of the inmates. On the seventh a second attack occurred. This was followed in rapid succession by other seizures, and within the space of one month 99 inmates of the establishment had perished by cholera.

Within the building and grounds the most diligent search failed to discover any thing that could account for this outbreak ; but on examining the premises out-

side the northern wall, there was found a vast mass of filth, consisting of the overflowings of cess-pools, the drainage from pigsties, and the general refuse of the establishment. "In short," says the medical officer, "the whole space included between the ravine and the wall, upon its north side, was one putrid and pestilential mass, capable of generating, under the ardent rays of a midsummer sun, the most poisonous and deadly exhalations."

During the greater part of the time that this outbreak continued, a slight breeze set in pretty steadily from the north, conveying the poisonous exhalations from behind the north wall directly over the house.

The first persons attacked were those who happened to be particularly exposed to the air blowing from the north side of the building.

On the male side of the house there was no protection from the ravine. The female side was partially protected by three rows of trees. The residents on the women's side were more numerous than on the men's, but the attacks were considerably less. Among the paupers, those who slept in apartments exposed to the north were attacked, those not so exposed generally escaped. In the basement story of a building, opening directly to the north, and close to a spot which received the contents of one of the cesspools, 17 lunatics were lodged, all of whom were attacked, and all died.

Eight medical students were attached to the establishment, of whom four occupied apartments with a northern exposure, and four were lodged in rooms with a southern exposure. The four whose rooms were exposed to the north were attacked, the four whose rooms



were not thus exposed escaped. The manager, also, who slept in a room above that of the students, looking to the north, was attacked: his family, whose rooms looked to the south, escaped.

Men, after some difficulty and delay, were employed to remove the filth and drain the ravine, the whole surface of which, after having been thoroughly cleansed by a stream of water, was thickly covered with lime, over which was put a deep stratum of earth. The men employed in this work were attacked with cholera, as were some of the several inmates of the almshouse who had been dispersed throughout Baltimore, but the disease did not spread to any other persons in the city. From the 25th of July, the day on which the drainage was completed, the disease suddenly declined from 11 the day previous, to 3, and, by the 9th of August, had entirely disappeared. In the cases of Baltimore, and the Baltimore almshouse, a neglected spot was severely visited by the pestilence, while, by well-directed exertion, an entire city escaped. In England an instance lately occurred in which, by similar exertion, a particular spot escaped, while a populous town was devastated by the plague.

No town in Great Britain has ever been so severely visited by cholera as Newcastle, yet the garrison of Newcastle has wholly escaped. The barracks in which the garrison of Newcastle is quartered, are situated about three-quarters of a mile from the centre of the town. In houses at distances varying from 20 to 200 yards of the barrack gates, numerous deaths from cholera took place, and in a village 250 yards from the barracks, the pestilence prevailed to a frightful extent for



many days, numbering one or more victims in almost every cottage.

On the outbreak of the pestilence in the town, the medical officers of the garrison, with the sanction and assistance of their superior officers, exerted themselves with great promptitude and energy to carry into effect all the means at their command, calculated to lessen the severity of an attack from which they could not hope altogether to escape. The sewers, drains, privies, and ash-pits were thoroughly cleansed; all accumulations of filth were removed; the spots where such filth had been collected were purified; the freest possible ventilation was established day and night in living and sleeping rooms; overcrowding was guarded against; the diet of the residents was, as far as practicable, regulated; the men were strictly confined to barracks after evening roll-call, and were forbidden to go into the low and infected parts of the town; amusements were encouraged in the vicinity of the barracks; every endeavor was made to procure a cheerful compliance with the requirements insisted on, without exciting fear; and there was a medical inspection of the men twice, and of the women and children, once daily.

The influence of the epidemic poison upon the troops was demonstrated by the fact that among 519 persons, the total strength of the garrison, there were 451 cases of premonitory diarrhoea, of which 421 were among the 391 men, irrespective of the officers, women, and children, the attacks being in some instances obstinate, and recurring more than once. Yet such was the success of the judicious measures which had been adopted, that no case of cholera occurred within the barracks during the

whole period of the epidemic ; and every case of diarrhoea was stopped from passing on to the developed stage of the disease : while in Newcastle there were upwards of 4,000 attacks, and 1,543 deaths.

The foregoing was so concisely and clearly expressed by the eminent Dr. Southwood Smith,\* of London, that we ventured to adopt his language. Similar examples showing the effect of sanitary measures, might be given to fill volumes, but these are deemed ample. Examples showing the extent of sanitary *neglect*, may be found without going even so far as Baltimore. That we may not be misunderstood, we will copy a single statement from the graphic pages of our City Physician's report on the cholera in Boston, in 1849, the same season that we have spoken of it in Baltimore almshouse. On pages 172-3, our valued and distinguished friend Dr. H. G. Clark, says: "One cellar was reported by the police to be occupied nightly, as a sleeping apartment, by thirty-nine persons ! In another, the tide had arisen so high that it was necessary to approach the bedside of a patient by means of a plank, which was laid from one stool to another ; while the dead body of an infant was actually *sailing* about the room in its coffin !"

If any one will be likely to ask what can be done to remedy the evils herein-before alluded to, no one will be very likely to inquire whether more of the public treasure has been expended in improving the health and elevating the physical, moral, and social condition of our population, than has been appropriated to other matters of at least no greater importance. It is not to be expected that every thing essential can be done at

\* Results of Sanitary Improvement. By Southwood Smith, M. D. London, 1854.

once, but there can be something done more than has been ; at least Boston can be kept from growing worse, and that would be a good beginning, which, followed up, would eventuate in lasting good to the City, and in the salvation of human life, health and happiness, now sacrificed by preventable disease and premature death.

But it seems unnecessary to extend these comments. They appear amply sufficient to produce conviction.

The British General Board of Health, in an elaborate report on the "Summary of Experience on Disease and Comparative Rates of Mortality," concentrate a mass of incontestible evidence in some very valuable "conclusions and suggestions."

After giving these conclusions, which need not be repeated here, as they would not vary, but only corroborate the tenor of what we have said respecting Boston ; and after expressing, in the most emphatic manner, a firm conviction "*that half the attainable period of human life is lost to all who are born ;*" it is urged by way of suggestion, (pp. 77, 78,)—"That even if the injury done were confined to the persons creating the nuisances, they ought to be compelled to be clean ; how much more where the innocent suffer for the guilty. That therefore sanitary measures ought without exception, to be compulsory ; and so far from any injustice being done by compulsory measures, it is a gross injustice to the masses of town [city] populations, who have practically no voice in the matter, that sanitary improvements should be optional. And, that at least the Public Health Act [11 & 12 Vict., cap. 63,] ought to be applied, after due inquiry, without petition, wher-



ever it shall appear that upon the average of seven years—

1. The mortality has been greater than 20 to a thousand inhabitants; or,\*

2. The proportion of deaths under one year old to the births, has been equal to 1 in 10; or,†

3. Where the proportion of epidemic, endemic and contagious diseases has been equal to 1 in 400; or,‡

4. Where the average age of all who have died has not exceeded 35 years; or,§

5. Where the average age of the adults who have died has not exceeded 56 years; or,||

6. Where the deaths under 20 years of age have exceeded the proportion of 40 per cent. of the whole deaths.”¶ And it is added,—

“That irrespective of the medical considerations connected with improved health and prolonged life, it is manifest that the most perfect sanitary arrangements are the largest pecuniary economy.”

The result of all that we have stated, of all investi-

\* In *Boston*, while several of the Wards were much more healthy than this standard of 20 deaths to a thousand of the population, thereby showing that this degree is fully attainable, yet the other Wards have so far exceeded it as to swell the rate in the whole City much higher, insomuch that had the mortality in *Boston* been only 20 to the thousand, there would have been an average of 994 deaths less than there was in *each* of the last five years.

† In *Boston*, this proportion during the past five years has been *more than* two in ten.

‡ We have not calculated this point for *Boston*, but presume it is not so striking as the other points during the last five healthy years.

§ In *Boston*, the average age of all who died was, in 1850, 20.41; in 1851, 20; in 1852, 20.48; in 1853, 19.60; in 1854, 20.92; in the aggregate of the five years it was 20.28.

|| We have not the data to determine this point here.

¶ In *Boston*, the deaths under 20 years of age exceeded 56 per cent. during the five years last past.



gations at home and abroad, may now be focalized in the single sentence, that, *localized FILTH, accompanied with moisture, constitutes the great source of excessive disease and death.* Any fatal epidemic, whatever it may be, that prevails in one year or another, visits most oppressively, the same localities in our city, and similarly conditioned sections in any city. It is no difficult matter to state beforehand, what particular districts and neighborhoods will sustain the chief weight of usual or unusual mortality.

In hot weather, there is naturally more moisture in the air than at lower temperatures. When there is the more moisture suspended in the atmosphere, there is a greater capacity also for it to contain more of the pestilential emanations of corrupt and corrupting matter. Hence, in the warm months, particularly when the summer is somewhat advanced, there is the highest mortality (See Tables IX. and X., pages 62 and 63,) from the severer epidemic and infantile diseases. But whatever view we take of the subject, all point, with the most potent significance, to the fact which will bear repeating, that, LOCALIZED FILTH ACCOMPANIED WITH MOISTURE IS THE CHIEF SOURCE OF EXCESSIVE MORTALITY, and this suggests the remedy. Whatever will have a tendency to check the accumulation of this, will have a tendency to check the increase of the evil results hitherto described ; whatever will overcome or remove this, will overcome and extirpate the high rates of mortality, before stated.

The complete removal of all refuse, animal and vegetable matter, from the vicinity of habitations, should be authoritatively commanded at all times, but particularly

in warm weather. A complete system of drainage and sewerage, should be in successful operation at all times, but especially during the hot season. An efficient public regard for out-door cleanliness, would beget a better regard for indoor cleanliness, by the occupiers of unhealthy tenements, and thus save, probably in half the cases, the necessity for compulsory appliances within the domicile. The inhabitation of cellars and other damp apartments should be entirely prohibited. We know of no city which has so large a proportion of its inhabited territory, once covered by water, now redeemed, or more correctly, partially redeemed, for much of it has never been brought from the reach of the tide, as is the case with Boston. This imposes upon us redoubled obligations for large exertions. The concentrated poison and filth exhaled from too many persons, in crowded apartments, should not be permitted. Suitable means for efficient ventilation should everywhere be insisted upon, but the change, however frequent, of an impure, pestiferous atmosphere, is no substitute for ventilation.

All public nuisances, tending to freight the air we breathe, with lethiferous vapors, should be blotted out of existence. Among these may be named the unwholesome and unchristian custom of intramural cemeteries. The revolting idea of burying the dead within cities and villages, did not exist until long after the Christian era, as is evident from both sacred and profane history.\*

\* Luke vii : 12. In A. D., 381, the Theodosian code prohibited interments within the walls of the city. This was ratified also by Justinian, in A. D., 529. In Charlemagne's Capitularies, A. D., 827, we find "*Nemo in ecclesia sepeliatur.*"

But in 1565, we find the Archbishop of Milan ordering a return to the custom

It is of comparatively modern origin. Many of the words relating to burial, in the Greek and Latin, signify, literally, "*to carry out*;" and the circumstances connected with the resuscitation of the son of the widow of Nain, indicate the Jewish custom. But of late years, much has been said and written against the practice, and in favor of extramural sepulture. The British Government, during the last ten or fifteen years, have created commissions, instituted enquiries, and accumulated sufficient evidence to prove the insalubrity of city burying places. Public and private individuals, have enlightened the people, and urged an expiation of past absurdity. But the tenacity with which some cling to the "superstition" is represented in the following question, which, with slight variety of expression, was again and again repeated by members of the House of Commons to the committee. "Do you think that there would be any objection to burying bodies with a certain quantity of quick-lime, sufficient to destroy the coffin and *the whole thing* in a given time?" With this "dissolving view" we feel inclined to leave the subject, but must with satisfaction refer to *Père La Chaise*, the father of rural resting-places for the dead. Notwithstanding our Mount Auburn, Greenwood and Laurel Hill, still our cities are sadly Golgothal. There are eight cemeteries within our own city, which have received corpses

of suburban cemeteries; and a century afterwards "the great Sir Christopher Wren," in his plan for rebuilding London, advocated the same thing.

Adam Clarke, the Divine, commenting on Luke vii: 12, pertinently says, "No burial-places should be tolerated *within* cities or towns; much less in or about *churches* and *chapels*. This custom is excessively injurious. Superstition first introduced a practice, which self-interest and covetousness continue to maintain."



this year. Certain restrictions were put upon some of them in 1853, by the City Government, but have been recently removed by the same power. Thus the City of Boston and the City of London, are both moving in the matter, but it happens to be in opposite directions ; for while passing through the press, the welcome voice of authority comes to us, across the ocean, announcing that, with the year 1855, "the last of the city graveyards were permanently closed in the city of London."<sup>\*</sup>

Without extending our remarks to an undue length, we propose to allude to two great sanitary measures, in which the public generally can do much. These relate to Public Bath and Wash-houses, and to Model Lodging Houses. And here we must also draw largely upon the experience of our foreign neighbors, where both have been extensively and successfully adopted, for by so doing, we shall be able to present the subjects more briefly and convincingly, as well as in a stronger light, for it has become historical truth.

If we are disposed to look at Eve and Pandora stereoscopically, and think we discover the source of evil, we most cheerfully award to their representatives of the present day, the origin and successful prosecution of many of our most important and useful, christian and humane institutions. Catharine Wilkinson was neither wealthy nor high-born, but while at service in the family of Mr. R——n, at Liverpool, she conceived the idea of assisting her still more unfortunate friends, by allowing them to come and do their washing in her cellar. The

<sup>\*</sup> Dr. Letheby's Report made to the City Commissioner of Sewers. London, January 8, 1856.



poorer persons were thankful for this privilege, and seemed to embrace it with grateful alacrity. It was found insufficient to accommodate all those who appreciated the favor, and the subject having been mentioned to Mr. R., he, with some assistance, provided more commodious arrangements. Thus, we have reason to believe, as we have high authority for saying, we have for the first time announced to the public, the obscure origin of a system that has engaged the attention, and commanded the influence of, not only the public, but the municipal and national authorities of various places, and different countries. Soon after this, (in 1842,) a more extensive establishment was erected in Liverpool, having a bathing department connected therewith. In the early part of 1854, we found several of these houses built at public expense, one of which cost \$75,000, and the corporation had just decided to build five more at an average cost of \$50,000 each.

Not long after their origin in Liverpool, and without the knowledge of it, a commencement was made in London, having the same end in view. Their importance and utility was soon developed by experience, and London now has no less than ten Bath and Wash-Houses, in successful operation, most of which are on a very extensive scale, and are public works under the sanction of Acts of Parliament. They were designed to benefit the poorer classes, and are immense auxiliaries to the improvement of public health. The charge for a single bath (plunge, cold, warm or shower,) varies from two to twelve cents; and in 1853, the nine establishments then in operation in London, furnished accommodations to about a million bathers, and three hundred thousand

washers of clothes. Similar establishments have already been carried into operation in Bath, Belfast, Birmingham, Bolton, Bristol, Coventry, Chester, Colchester, Dublin, Exeter, Hull, Macclesfield, Maidstone, Oxford, Preston, Plymouth, Rotherham, South Shields, Wolverhampton, and many other cities and towns. In the admirable Report\* before us, of P. P. Baly, C. E., with its plans and estimates for buildings, &c., we also learn that the Governments of France, Belgium and Norway, also the civic authorities of Hamburg, Munich, Amsterdam, Lisbon, Turin and Venice, have applied to the committee in London for information on the subject. The Government of France forthwith voted 600,000 francs to assist in the promotion of such institutions; and a scheme was started in Paris, for erecting fourteen establishments in that city, at a cost of 2,000,000 francs. All this was done in less than ten years after they first became known to the public.

The only Public Bathing and Washing Establishment in this country, that we are aware of, was erected in the City of New York, at an expense of \$42,000, and commenced operations June 1, 1852. By the third Annual Report, we learn that, during the year ending June 5, 1855, there were 69,325 bathers, and 7,867 washers, who availed themselves of its privileges; the price of a single bath being 3, 6, 10 and 12 cents, ac-

\* Baths and Wash-Houses for the Laboring Classes, a Report with plans, &c., by Price Prichard Baly, C. E. Also an Appendix to the same—both quarto.

See also Report of Commissioners for Public Baths and Wash-Houses in St. James, Westminster, 1854. Also Baths and Wash-Houses for the Industrious Classes. A Lecture in Stratford, by Wm. Hawes, Esq., 1852; and London Shadows, a glance at the "Homes" of the Thousands, by George Godwin, F. R. S., 1854, &c., &c.

according to kind, and the charge to washerwomen was equally moderate.

Without discussing the obvious importance to health and the general welfare, of cleanliness of person and clothing, we have expressed the above facts to show with what consideration the means for promoting the public good of the poorer classes of population, and with what readiness to adopt such measures, the authorities and the more favored of other communities are disposed to act.

There is another method also, somewhat allied to the foregoing, by which the public can engage largely either with or without the co-operation of legislative bodies. We refer to the subject of Model Lodging Houses, or the construction of a better class of dwellings for the laboring population. These, like the Public Bathing and Wash Houses, are not strictly charitable establishments in the abstract application of the term. They are, therefore, the more commendable, as they furnish a much surer means for the indigent to have a care for themselves. Almsgiving is not generally the best mode of benefiting those who are made the objects of charity. There is a higher and more efficient benevolence in doing that which will encourage the needy to do something, and be something by their own well applied exertions, than by extending them the means of living in idleness. Give encouragement and direction to abilities already possessed in most cases, and you beget a laudable ambition, a self-respect and self-reliance, that will accomplish far more than by naked almsgiving, towards elevating that principle which will not readily submit to a life in the workhouse, or accept



of the too often mistaken private benevolence, which, though it may be thought to "bless" the giver, seldom benefits, but more frequently degrades the recipient.

The great subject of Model Lodgings, has acquired new interest among us, and received an effective impetus by the munificence of our late distinguished fellow-citizen, the Hon. Abbott Lawrence, who, in his testament left \$50,000 to be appropriated for the establishment of Model Dwellings in our City. This noble act has created much inquiry for information on the subject; and as the mind that conceived the idea of doing so much towards a beginning or furtherance of the object, was inspired to do so, by facts and associations in the British metropolis, where such are in successful operation, we feel that we cannot do better than to draw from the same experience which engendered this bequest. We have before us a large number of documents on this subject, such as Reports from Commissioners under the Crown, Board of Health, and other public officers, as well as also, lectures, pamphlets, and monographs, many of them with detailed plans, &c., from the "Society for improving the condition of the laboring classes," which is under the patronage of the Queen, and of which Prince Albert is the President—from "The Albert Investment and Sanitary Village Building Association," &c., &c., and from individual philanthropists of high authority. But we find the results of these establishments so summarily comprehended in a comparatively recent pamphlet, by Dr. Southwood Smith, from which we have already quoted page 80, and his statements so accord with our own notes and observations, made while visiting them, that



we shall become much indebted to him for what will be found in several of our future paragraphs.

The facts disclosed as the results of registration gave definiteness to the conviction which had been growing for several years in the minds of many observing individuals. In England, this took a practical direction a few years since, and led to investigations by persons in private and public life. The evidence thus collected, distinctly traced to the condition of the houses of laboring classes, the main cause of the excessive sickness and mortality which the registration records had indicated.

But the evidence was not so apparent that this state of things is no necessary and inevitable condition of poverty. While the consequences of bad sanitary conditions were demonstrated, there were presented no very conclusive facts to prove the power of good sanitary conditions to secure to the working man and his offspring the like measure of health and life as is possessed by the wealthier classes. There was, indeed, the strongest conviction in the minds of those who had paid attention to the subject, that evidence to this effect was obtainable, and they felt assured that it would be found in the result of residence in houses so constructed as to be fit for human habitation.

It was under this impression that about fourteen years ago a few individuals, who had taken the lead in the investigations just referred to, formed themselves into an association for the purpose of putting the truth of their conviction to the test of experiment. Their plan was to erect a large building divided into suites of apartments, capable of accommodating a number of

families, and provided with the following sanitary conditions :—

1. The thorough subsoil drainage of the site.
2. The free admission of air and light to every inhabited room.
3. The abolition of the cesspool and the substitution of the water-closet, involving complete house-drainage.
4. An abundant supply of pure water.
5. Means for the immediate removal of all solid house refuse not capable of suspension in water, and of being carried off by water.

The association did not conceive it possible for any private body to provide houses of this description for the laboring classes generally, but they thought that it might be practicable to erect some healthy and comfortable houses fit for the laborer and artizan, and to offer such improved dwellings at no higher rent than is now paid for inferior and unhealthy houses, and they proposed to erect as many of these as should be found possible.

It also seemed probable that benefit would result from their example; that if it should be found practicable to offer houses well built, well drained, and well supplied with air, water, and light, at no greater charge than is obtained for houses in which no provision whatever is made or attempted, for the supply of any one of these essential requisites of health, cleanliness, and comfort, a public service would be rendered beyond the mere erection of so many better constructed houses; and that, especially, it might help to render it no longer easy for the landlord to obtain an amount of rent for badly-built, which ought to suffice for well-built houses,

and that it might thus indirectly tend to raise the general standard of accommodation and comfort for all houses of this class.

A charter was readily granted by the Crown<sup>2</sup> under the Premiership of Sir Robert Peel; and subsequently a supplemental charter was given, bestowing power to extend the scheme by establishing Branch Associations in the Provincial Districts of England and Wales, and increasing the capital to one million sterling.

Seven years elapsed before the preliminary proceedings, and the erection of the first buildings were completed, so that they have been opened for residents only about seven years.

This first association took the name of the "Metropolitan Association for Improving the dwellings of the Industrious Classes," and their first buildings, called the "Metropolitan Buildings," are situated in a crowded neighborhood occupied almost entirely by the working classes.

The Metropolitan Buildings (Old Pancras Road) consist of 110 sets of rooms, 20 being sets of two rooms, and 90 of three rooms. Attached to each set of rooms is a scullery provided with a sink, a supply of water at high pressure at the rate of forty gallons per day, and the means of carrying off ashes and other solid refuse through a shaft accessible from the scullery. There is no cess-pool on the premises. The water closet, substituted for the privy, is situated in the scullery, the door of the closet being so hung as, when open, to shut off access to the scullery.

Each living-room is furnished with a range, boiler, and oven. By an extremely small quantity of fuel the



oven is capable of baking bread, cooking meat, and any other kind of food, and the boiler contains a quantity of hot water always ready for use.

The sum expended on these buildings amounts to 17,736*l.* 17*s.* 11*d.* The rooms, which average from 14 ft. by 10 ft. 6 in., to 13 ft. by 8 ft., are let from week to week; the rent of each set varies from 3*s.* 6*d.* to 6*s.* 6*d.* per week. That these rents are moderate will be seen by comparing them with the rents commonly obtained in the metropolis.

In the streets in the neighborhood of Drury-lane, for example, single rooms let for from 3*s.* to 4*s.* 6*d.* per week. The average rental in Westminster for a single room, not 12 feet square, is 3*s.* per week. The total rents receivable from the various establishments of the Association since December, 1847, amounts to 14,630*l.* 11*s.* 7*d.*, of which there has been actually received 14,594*l.* 6*s.* 11*d.*, leaving a deficiency from bad debts of only 36*l.* 4*s.* 8*d.* for five years.

The occupants are chiefly the higher class of laborers and artizans.

Besides the Metropolitan Buildings in Pancras Road, the Association has erected another set of Metropolitan Buildings in Albert-street, Mile End New Town, capable of accommodating 60 families, at a cost of 10,297*l.* 4*s.* 10*d.* They have also purchased 25 houses, situated in Pelham street and Pleasant Row, Mile End, capable of receiving about 23 families, at a cost of 5,120*l.* 19*s.* 3*d.*; and they have decided on erecting another building in Bermondsey, capable of accommodating 108 families, at a probable cost of from 20,000*l.* to 25,000*l.*

The Directors have also recently obtained possession



of a building in course of erection in New street, Golden Square, in the parish of St. James, which will accommodate 64 families. A lodging-house for single men was erected, capable of accommodating 234 inmates, at a cost of 13,493*l.* 13*s.* 9*d.*, and another capable of accommodating about 128 inmates, was purchased by the Society for 1,422*l.* 7*s.* 7*d.*, being leasehold, at a heavy ground rent. Two years ago, four Branch Associations had been affiliated with the parent institution, namely, at Brighton, Dudley, Newcastle, and Ramsgate.

Such are the means which the Association were enabled to acquire for making the experiment on which they had decided.

The results of the experiment with reference to its great object, the protection of health and the diminution of preventible sickness and mortality, are now to be stated. In the year 1850, the comparative mortality of the residents in the Metropolitan Buildings, both adults and infants, was so small, that it was generally concluded that the result was accidental. In the year 1851, this comparative low rate of mortality continued, though the actual mortality was higher than in the former year. In the subsequent year the mortality again became nearly the same as in 1850.

The following are the exact results:—In 1850, the total population in the Metropolitan Buildings, Old Pancras Road, was 560, and the deaths were 7, being at the rate of twelve and a half in 1000 of the living. In 1851, the total population was 600, and the deaths were 9, being at the rate of 15 in the 1000. In 1852, the total population was 680, and the deaths were 9,

being at the rate of 13 and a fraction in the 1000. The average mortality of the three years in these buildings has been 13.6 per 1000. But taking together the whole of the establishments of the Association, which had now come into full occupancy, the total population for the year ending March, 1853, amounted to 1,343. Out of this number there were, during that year, 10 deaths, being at the rate of 7 and a fraction in the 1000.

If this mortality is compared with the mortality of the metropolis generally, and with the mortality of one of its worst districts, the following results are obtained : The deaths in the whole of the metropolis, during the same year, (1852,) reached the proportion of 22 and a fraction in the 1000 ; (which is more favorable than the City of Boston exhibits,) consequently, the total mortality in London generally, taking together all classes, rich and poor, was proportionally more than three times greater than the mortality in these establishments. On a comparison of the infant mortality in these dwellings with that of the metropolis generally, the results present a still more striking contrast. Of the total population in the establishments of the Associations (1,343) 490 were children under ten years of age. Among these there occurred 5 deaths, being in the proportion of 10 in the 1000. In the same year the infant mortality in the whole of London, reached the rate of 46 in the 1000 ; consequently, the infant mortality in the establishments of the Association has been little more than one-fifth of that in London generally.

This low rate of mortality, the comparative absence of sickness, and the general state of well-being implied in the two former conditions, will appear the more re-

markable when compared with the mortality in one of the worst districts of the metropolis. In the Notting Hill division of Kensington Parish, there is a place called the "Potteries," which is wholly destitute of the sanitary provisions secured to the improved dwellings.

In the Potteries, the proportion of deaths per cent. to the population was 4.03, or 40 in the 1000; in the Metropolitan Buildings it was .74, or 7 in the 1000, being an excess in the Potteries of 33 in the 1000. In the potteries, the proportion of deaths per cent., under ten years of age to the population under ten years of age, was 10.9, or 109 in the 1000; in the Metropolitan Buildings it was 1.0, or 10 in the 1000, being an excess in the Potteries, of 99 in the 1000. In the Potteries, the proportion per cent., of deaths from zymotic diseases, under ten years of age, to the population, was 5.2, or 52 in the 1000; in the Metropolitan Buildings it was .82, or 8 in the 1000, being an excess in the Potteries, of 44 in the 1000.

If the deaths in the whole of the metropolis had been at the same rate as in the Potteries, there would have died in London, in that year, 94,950 persons, whereas the actual deaths were 54,213;—that is, there would have been a loss of upwards of 40,000 lives; and if the whole of the metropolis had been as healthy as the Metropolitan Buildings, Old Pancras Road, on an average of the three years, there would have been an annual saving of about 23,000 lives.

Social and physical results in all respects similar have been obtained by another society, the "Society for Improving the condition of the Laboring Classes," incorpo-



rated by Royal Charter, with the Earl of Shaftsbury for its President.

Evidence confirmatory of the efficacy of sanitary provisions to prevent the recurrence of epidemic diseases, and greatly to reduce the rate of mortality, have also been obtained from other sources. One of the most unhealthy spots in the Metropolis has recently afforded a signal instance of it.

Three years ago Lambeth-square was as unhealthy as the Potteries. The population remained the same; the occupations, mode of life and habits of the people, remained the same; no change of any kind took place, excepting the introduction of certain sanitary improvements. No history is more instructive. A new system of drainage was applied to the whole square. Water-closets were substituted for cesspools, and stoneware pipes for brick drains, and the apparatus was provided with an adequate supply of water.

By these improvements the houses were placed in the same sanitary condition essentially as the Society's dwellings. The result on the health of the inhabitants was strikingly similar. On a re-examination of this property in November, 1853, it was found that the mortality had been reduced from 55 in 1000, to 13 in 1000.

Results so extraordinary are beyond hope, and almost beyond belief, but derived from sources thus widely different and independent, they are confirmatory of each other. They have further received decisive confirmation to a most unexpected extent from the operation of the Common Lodging Houses Act.

The "Common Lodging House Act," received the



Royal assent on the same day that the "Laboring Classes Lodging House Act" did. The former is a compulsory, the latter an enabling act.

Typhus, seems to be the fell destroyer of more lives in England, than any other disease; but it has been totally annihilated in many neighborhoods by sanitary measures. At last advices, there had never occurred a single case of typhus in any one of all the improved dwellings, since they were first opened. This remark applies to all Model Lodging Houses with which we are acquainted; and is equally true of other dwellings which have come effectually under that compulsory statute, the Common Lodging House Act. We need not enter into extended details in proof of this point. From the mass that is before us, we will give a single instance which is in keeping with the rest.

Captain Hay, one of the Metropolitan Police Commissioners in London, in his return to the Secretary of State for the Home Department, for the quarter ending October 23, 1853, says, that, in the houses under regulation, the lodgers numbered at least 25,000. During the quarter there had not occurred a case of fever in one of these houses, yet before they were under regulation, twenty cases of fever have been received into the London Fever Hospital, from a single house in the course of a few weeks. In the whole of the improved or model dwellings, the exemption from cholera has also been complete. In the epidemic of 1848-9, no case of cholera occurred in any one of these houses, though the pestilence raged in all the districts in which they are situated, and there were instances of two, and even four deaths, in a single house, close to their very walls.

Moral pestilence has, at the same time, been checked. The intemperate have become sober, and the disorderly well conducted, since taking up their abode in these healthful and peaceful dwellings. No charge of crime, no complaint even of disturbance, has been lodged at any police station against a resident in these dwellings since their first occupancy. In the establishment of Model Dwellings in this country, some modification may be useful, the better to adapt them to the peculiarities of our population. Such, however, should relate only to the policy of their management, or the relation which the tenant shall sustain to the ownership of the buildings. In the City of New York, we believe, that there is a plan in initiation, which promises much. In Boston, the experiment has already been started by private enterprise and passed into operation, but the experience as yet has been too brief to furnish an idea of success, adequate to decide what is possible. Every thing thus far, however, promises much, and when united with the results that we bespeak for those Homes that are to be erected by the munificence of our late distinguished LAWRENCE, we most confidently anticipate additional evidence; that sanitary improvement is easy and pecuniarily profitable, as well as a duty which humanity owes to God and itself.

But we forbear to prolong the subject. We have already been led beyond our intentions by a strong conviction of its great importance. We have also felt that there is at the present time in our community, a growing desire for information, and we fully believe that there is just before us, in the future, to be a general and operative faith, that, by the comparatively cheap, simple

and rational measures suggested in the foregoing pages, will not only relieve distress, and prolong life, but also elevate the social and moral condition of thousands of our population. Human agency can accomplish wonders. Means are to be used, and measures adopted, which will prevent the deadly visitation of fatal epidemics. Public sentiment must be informed, that it may act, and act wisely, in urging and co-operating with, the Public Authorities. Public opinion in England is already as much in advance of us, as are their sanitary labors.

Lord Palmerston, the Home Secretary, in reply to the inquiry from a Presbytery of the Scottish Church, whether there would be appointed a national fast on account of the re-appearance of the cholera in Britain, says, "The Maker of the Universe has established certain laws of nature for the planet in which we live, and the weal or woe of mankind depends upon the observance or neglect of those laws. One of those laws connects health with the absence of those gaseous exhalations which proceed from overcrowded human beings, or from decomposed substances, whether animal or vegetable; and these same laws render sickness the almost inevitable consequence of exposure to those noxious influences. But it has, at the same time, pleased Providence to place it within the power of man to make such arrangements as will prevent or disperse such exhalations, so as to render them harmless; and it is the duty of man to attend to those laws of nature, and to exert the faculties which Providence has thus given to man for his own welfare.

Lord Palmerston would, therefore, suggest, that the



best course which the people of this country can pursue, to deserve that the further progress of the cholera should be stayed, will be to employ the interval that will elapse between the present time and the beginning of next spring, in planning and executing measures by which those portions of their towns and cities which are inhabited by the poorer classes, and which, from the nature of things, must most need purification and improvement, may be freed from those causes and sources of contagion which, if allowed to remain, will infallibly breed pestilence and be fruitful in death, in spite of all the prayers and fastings of a united, but inactive nation."

The celebrated author of "Glaucus" utters our own sentiments when he says "As a clergyman, I feel bound to express my gratitude to Lord Palmerston, for having refused to allow a National Fast-day on the occasion of the present re-appearance of pestilence, and so having prevented fresh scandal to christianity, fresh excuses for the selfishness, laziness, and ignorance which produce pestilence, fresh turning men's minds away from the real causes of this present judgment, to fanciful and superstitious ones." Our Reverend author also pertinently adds: "We cannot plead ignorance as an excuse. The facts of sanitary science are at once so notorious, and so easy of comprehension, that ignorance in an aducated man, must be either willful and deliberate, or the consequences of a stupidity which ought to unfit a man for any office or responsibility."\*

In the foregoing pages, we have deduced certain facts

\* Who Causes Pestilence? Four Sermons, by Rev. Charles Kingsley, Rector of Eversley, and author of Amyas Leigh, Hypatia, Alton Locke, &c.



pertaining to the population of Boston in 1855, and added some remarks on their sanitary condition, offering some direct and indirect suggestions for its improvement. For this there seems to be a great demand, and from it there must flow the best consequences to the health, prosperity and happiness of our citizens. To give a more forcible demonstration to the latter point, we have drawn from the very extensive and most unquestionable experience of our English neighbors. This may be centred in the following sentence: "It has been proved in the Reports of the General Board of Health of England, that every efficient sanitary improvement, has been followed, as directly as cause and effect, by a corresponding decrease of sickness and mortality. *There is no exception to this rule.*"

The same laws in regard to this matter, obtain in New England as in Old England. Cholera, typhus, dysentery and other Zymotics, can be controlled and extirpated here as well as there. They are difficult to cure, but easy to prevent. A slight inadvertence in a bake-shop may originate a conflagration that burns down the city of London against every applicable exertion. It is equally true that neglected putrescence may deluge a city with degradation, disease and death. While mankind have been looking in every by-place of science, and ransacked the musty tomes on therapeutics, to find a panacea for the cholera and other pestilential epidemics, they have neglected to observe the simplest, surest, and only mode of saving their victims, which lies in removing the causes, the *pabulum* on which the very existence of these diseases are dependent. The warning voice of our profession, falls un-

heeded until it is too late, and then, too often its skill is questioned, when every thing short of a very great miracle-working power is, and of necessity must be impotent. Still we must strive on in the death-struggle. No less than forty physicians, besides other ministers of relief, were but lately crushed beneath the juggernaut of pestilence in a southern city. They were sacrificed with the other victims on the altar of sanitary neglect. But it is not so much the *unusual* visitation that occasionally sweeps over a panic-stricken community, like that at Norfolk, as the *usual* preventable mortality, that in the aggregate, numbers the largest catalogue of avoidable deaths.

If the hints we have given shall arrest attention and incite legitimate action, every true philanthropist, and every christian heart will respond a sincere AMEN.